

**Rokebrand, Celtia R. (CONTR)**

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**From:** McCormack, Brian  
**Sent:** Friday, February 16, 2018 11:12 AM  
**To:** jeckard@firstenergycorp.com  
**Subject:** Test

**Flores, Paola (CONTR)**

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**From:** Winberg, Steven  
**Sent:** Thursday, March 22, 2018 9:17 AM  
**To:** bobmurray@coalsource.com  
**Cc:** mcarey@coalsource.com  
**Subject:** DOE Coal Roundtable Meeting  
**Attachments:** April 2018 Wye Agenda.doc; Wye Participant List.docx; Directions to the Wye River Conference Center.docx

Dear Mr. Murray

I enjoyed seeing you at the National Mining Association Board meeting earlier this week and want to thank you for your support on the DOE fossil energy initiatives.

I would also like to invite you (or your designee) to participate in a small, strategic workshop being organized by my office to explore the challenges and opportunities (especially transformational coal technology opportunities) in the electricity generation sectors that will help achieve President Trump's commitment to reinvigorate the coal industry and create jobs.

The workshop is designed to be a collegial, interactive, roundtable discussion at a strategic level and less on formal presentation (but will include some presentations to stimulate discussion). DOE has periodically organized such workshops to discuss important, strategic coal topics.

Participation in the workshop is by invitation only – space is limited. The geographic location of this workshop will be at the Wye Conference Center near Queenstown, Maryland (eastern shore Maryland about 75 miles from DC). This very informal facility used to be owned by the University of Maryland but is now under new ownership. It is somewhat remotely located with the conference facilities, participant lodgings and all meals provided at that one location. These DOE workshops have come to be known as the Wye workshops given their organization at the Wye Conference Center.

The workshop has been scheduled for April 3<sup>rd</sup> to 5<sup>th</sup>, 2018, checking in at 2-4PM on Tuesday, April 3<sup>rd</sup> (with a reception, dinner, and a short evening session). There will be all-day workshop discussions/presentations on Wednesday, April 4<sup>th</sup>, followed by a morning session on Thursday April 5<sup>th</sup> followed by a lunch at noon to end the workshop. There is a registration fee of \$830 for this workshop, which covers all on site costs, lodgings (Tuesday and Wednesday night), dinner on Tuesday evening; breakfast, lunch, reception and dinner on Wednesday; and breakfast and lunch on Thursday (and refreshments during the meeting breaks).

If you are able to participate, your Workshop registration and room reservation at the Wye River Conference Center will be taken care of without any action required on your part (there are no other convenient lodgings in the area).

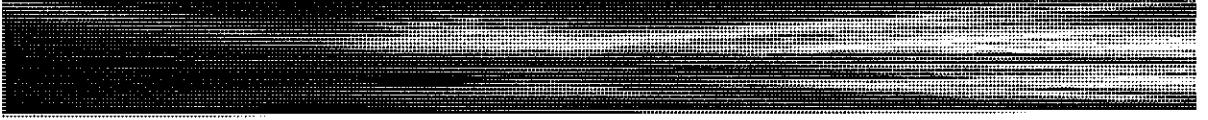
The workshop agenda, participant list and directions are attached.

Please let me know if you or your selected designee can participate.

Thank you,

*Steve*

Steven Winberg  
Assistant Secretary  
Office of Fossil Energy  
Department of Energy  
1000 Independence Avenue, SW  
Washington, DC 20585  
202 586 6660



## Wye Workshop on Invigorating the U.S. Clean Coal Industry April 3-5, 2018

Maximizing the availability and clean use of all of our domestic energy resources is critically important to U.S. national security, energy security and dominance, economic growth, and job creation. Coal is our most abundant energy resource and coal power plants contribute greatly to grid generation diversity, resilience and reliability. The development and deployment of transformational clean coal technologies can provide a pathway to having competitive, coal power plant options available to replace plants being retired and as options for future capacity additions. Success in this regard will require an innovative strategic approach, including the consideration of modular, standardized designs and smaller unit deployment. It is highly unlikely that new commercial coal plants will be built absent the availability of competitive, transformational technology, regulatory relief, and Federal Government leadership.

In the short term, regulatory reforms along with existing plant upgrades could modernize existing power plants (which includes improving their efficiency and overall performance) and maximize their service life.

Longer term, existing power plants will eventually have to be replaced and new plants will have to eventually be built to meet future growth in electricity demand.

What can be done to assure grid diversity and retention/expansion of coal in the generation mix to assure grid reliability and resilience?

### Day 1 – Tuesday (April 3)

2-4:00 PM     Check-in

5:00 PM     **Session 1: Future Coal Technology Needs and Issues**

5:00 PM     **Presentation: CURC Vision for Future Technology Needs and Issues**  
Presenter (Followed by Discussion): Shannon Angielski, Executive Director, CURC

5:30 PM     **Presentation: Regulatory Update & Update on Deregulated Market Impacts on Base Load**  
Presenter (Followed by Discussion): Mike Nasi, Partner, Environmental & Legislative Practice Group, Jackson Walker, L.L.C

6:00 PM	<b>End of Day 1 Discussions</b>
6:30 PM	<b>Reception (Informal continuation of discussions)</b>
7:00 PM	<b>Dinner</b>
<b>Day 2 – Wednesday (April 4)</b>	
7:00 AM	<b>Breakfast</b>
8:00 AM	<b>Welcome and Introductory Comments</b> Steven Winberg, Assistant Secretary for Fossil Energy, U.S. Department of Energy (ASFE).
8:15 AM	<b>Session 2: Future Coal Technology Directions and Considerations</b>  <b>Opening Remarks:</b> <i>Opportunities for Invigorating the U.S. Clean Coal Industry: Strategic Directions &amp; Potential Role for Transformational Technologies</i> <b>Speaker:</b> Secretary Winberg, ASFE
9:15 AM	<b>Roundtable Discussion:</b> <i>Opportunities for Invigorating the U.S. Clean Coal Industry: Strategic Directions &amp; Potential Role for Transformational Technologies</i>
10:15 AM	<b>Break</b>
10:45 AM	<b>Continuation Roundtable Discussion:</b> <i>Opportunities for Invigorating the U.S. Clean Coal Industry: Strategic Directions &amp; Potential Role for Transformational Technologies</i>
11:15 AM	<b>Remarks (Followed by Discussion):</b> <i>Transformational Coal Technology Directions &amp; Strategic Considerations</i> <b>Speaker:</b> Kerry Bowers, VP, Technology Licensing, Southern Company Services
12:00 PM	<b>Remarks (Followed by Discussion):</b> <i>The Need and Potential for Clean and Efficient Coal Technologies</i> <b>Speaker:</b> Robert M Pugret, President, Energy of Industries of Ohio
12:45 PM	<b>Lunch (Informal continuation of discussions)</b>
2:00 PM	<b>Continuation of Session 2</b>
2:00 PM	<b>Remarks (Followed by Discussion):</b> <i>Basin Electric Perspectives</i> <b>Speaker:</b> Gavin McCollam, Director, Engineering Services, Basin Electric Power

2:30 PM     **Remarks** (Followed by Discussion): *Tri-State Perspectives*  
**Speaker:** Doug Lempke, Tri-State

3:00 PM     **Remarks:** (Followed by Discussion): *All of the above Fossil Fuel Considerations*  
**Speaker:** Mike Moore, Managing Partner, East-West Strategic Advisors

3:45 PM     **Break**

4:15 PM     **Roundtable Discussion:** *Perspectives on Earlier Discussions*

5:30 PM     **End of Day 2 Discussions**

6:00 PM     **Reception** (Informal continuation of discussions)

7:00 PM     **Dinner** (Informal continuation of discussions)

### **Day 3 – Thursday (April 5)**

7:30 AM     **Breakfast** (Informal continuation of discussions)

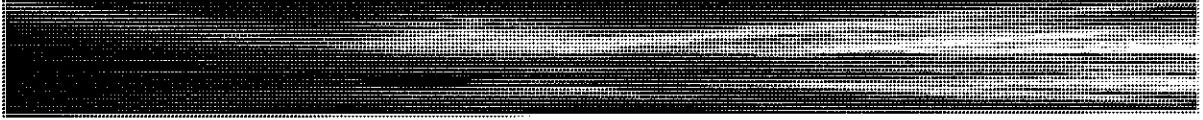
9:00 AM     **Remarks** (Followed by Discussion): *Peabody perspectives on coal and coal-based power generation*  
**Speaker:** Holly Krutka, PhD, VP, Coal Generation & Emission Technologies, Peabody

9:45 AM     **Break**

10:00 AM    **Summation and Wrap-Up Roundtable Discussion**  
Discussion Leader: Secretary Winberg

11:30 AM    **Lunch** (Informal continuation of discussions)

**End of Workshop**



## **Wye Workshop on Invigorating the U.S. Clean Coal Industry April 3-5, 2018**

### **PARTICIPANT LIST**

**Workshop Chair:** Steven Winberg, DOE Assistant Secretary for Fossil Energy (ASFE)

Shannon Angielski, Executive Director, Carbon Utilization Research Council (CURC)  
Kerry Bowers, VP, Technology Licensing, Southern Company Services, Inc.  
Jarad Daniels, Director, Office of Strategic Planning & Global Engagement, DO/FE  
Robert Gentile, former DOE ASFE & President/CEO, LTI  
Joseph Giove III, Director, Coal Business Operations, DOE/FE  
John Harju, VP, Strategic Partnerships, UNDEERC  
Angelos Kokkinos, Director, Office of Advanced Fossil Technology Systems, DOE/FE  
Holly Krutka, PhD, VP, Coal Generation & Emission Technologies, Peabody  
Doug Lempke, Tri-State Generation & Transmission Association, Inc.  
Mark Maddox, Principal Deputy Assistant Secretary (PDAS), DOE/FE  
Doug Matheney, Special Advisor to the Secretary, DOE/FE  
Gavin McCollam, Director, Engineering Services, Basin Electric Power Cooperative  
Darren Mollot, Associate DAS for Clean Coal and Carbon Management, DOE/FE  
Mike Moore, Managing Partner, East-West Strategic Advisors  
Mike Nasi, Partner, Environmental & Legislative Practice Group, Jackson Walker, L.L.C.  
Ken Nemeth, Executive Director, Southern States Energy Board  
Sean Plasynski, PhD, Director (Acting), DOE National Energy Technology Laboratory  
Robert Pugret, President, Energy Industries of Ohio  
Mike Smith, former DOE ASFE & Executive Director, Interstate O&G Compact  
Commission  
Ken Vincent, Chief of Staff (Acting), DOE/FE

**Workshop Support:**

Doug Carter, **Workshop Facilitator**, former Director DOE/FE Coal Policy/Strategy Office  
JP Dutton, LTI  
George Rudins, former DOE Deputy Assistant Secretary for Clean Coal

**Directions to the Wye River Conference Center (Provided by the Wye)**

**River House 600 Aspen Drive**

**Queenstown, MD 21658**

**Ph: 410 820 0906**

**Fx: 410 820 5390**

From WEST- US-301N/US-50 E to Chesapeake Bay Bridge (toll plaza), Proceed over Bay Bridge on US-301N/US-50 E to Chesapeake Bay Bridge (toll plaza), cross over Chesapeake Bridge for approximately 15 miles, continuing on US 50 E towards Ocean City at the split. In approximately 2 miles, turn right onto Carmichael Road (you will see a sign for the Aspen Institute and Wye at the Intersection). Continue on Carmichael to intersection with Cheston Lane. To reach River House proceed straight ahead.

**FROM SOUTH**-From I-95 North, follow signs for I-495/Baltimore, continue on I-495 E/I-5 N, passing through District of Columbia, Entering Maryland, (21 miles), Take Exit 19A to merge onto US-50 E (partial toll) for approximately 40 miles, Use the right 2 lanes to US 50 E exit toward Ocean City for .2 miles, continue on US-50 E. Turn right onto Carmichael Road at blinking light for approx. 4 miles and follow signs to property.

**FROM BALTIMORE/WASHINGTON INTERNATIONAL THURGOOD MARSHALL AIRPORT**- On leaving airport follow sign marked EASTERN SHORE and BAY BRIDGE. To get to U.S. Route 50 East, follow signs marked BAY BRIDGE. Proceed over Bay Bridge on US-301N/US-50 E to Chesapeake Bay Bridge (toll plaza), cross over Chesapeake Bridge for approximately 15 miles, continuing on US 50 E towards Ocean City at the split. In approximately 2 miles, Turn right onto Carmichael Road. Continue on Carmichael to intersection with Cheston Lane. To reach River House proceed straight ahead.

**FROM RONALD REAGAN WASHINGTON NATIONAL AIRPORT**- On leaving airport follow U.S. Route 1 through Alexandria, Virginia to Interstate 95 North. Follow Interstate 95 North to U.S. Route 50 East. Continue over the Chesapeake Bay Bridge. Turn right 1/2 mile after milepost 49 at Carmichael Road and sign marked Aspen Institute. Proceed about 3 miles to intersection with Cheston Lane. To reach River House proceed straight ahead.

**Flores, Paola (CONTR)**

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**Subject:** Follow up Call with Robert Murray  
**Location:** Steve will Call Mr. Murray at (b) (6)

**Start:** Fri 3/23/2018 3:00 PM  
**End:** Fri 3/23/2018 3:30 PM  
**Show Time As:** Tentative

**Recurrence:** (none)

**Meeting Status:** Not yet responded

**Organizer:** Winberg, Steven  
**Required Attendees:** Jenkins, Patsy

**Flores, Paola (CONTR)**

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**From:** Winberg, Steven  
**Sent:** Thursday, March 29, 2018 1:13 PM  
**To:** bobmurray@coalsource.com  
**Subject:** FW: Title XVII Application Info  
**Attachments:** Title XVII application background.pdf; Solicitation Part I Appendix.pdf; Solicitation Part II Appendix.pdf

Bob

Attached is the information for the Loan Program.  
DOE is happy to meet with you to discuss in more detail.

[https://www.energy.gov/sites/prod/files/2016/06/f33/Suggestions\\_for\\_Strong\\_Loan\\_Guarantee\\_Application\\_June2016.pdf](https://www.energy.gov/sites/prod/files/2016/06/f33/Suggestions_for_Strong_Loan_Guarantee_Application_June2016.pdf)

<https://www.energy.gov/lpo/title-xvii/title-xvii-faqs>

<https://www.energy.gov/lpo/title-xvii/title-xvii-project-eligibility>



## Suggestions for a Strong Title XVII Innovative Clean Energy Loan Guarantee Application

June 24, 2016

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The U.S. Department of Energy's (DOE) experience with previous loan guarantee solicitation processes has yielded useful lessons. Where possible, DOE has tried to incorporate these lessons into new solicitations in order to make the application process transparent and robust, yet efficient. Stronger applications will enable DOE to process loan guarantee applications more efficiently, significantly reducing the administrative and resource burdens on the applicant as well. To that end, DOE has compiled the following non-exhaustive list of features that have historically distinguished particularly strong applications from weaker ones. These attributes are grouped into three categories:

- Key attributes that facilitate the *financial evaluation*
- Key attributes that facilitate the *technical evaluation*
- *Administrative suggestions* to facilitate the overall review process

Please note that the list below is not exhaustive, nor is every element discussed equally relevant to every application. In addition, although this document discusses individual attributes that may yield a stronger application, the application ultimately will be evaluated on its overall merits, and no single attribute is likely to be dispositive. Please refer to the relevant solicitations (<http://energy.gov/ipo/title-xvii-open-solicitations>) for all information on complete application requirements and evaluation scoring criteria. This document is intended solely to serve as a guidance tool to help prospective applicants submit the strongest applications possible.

NOTWITHSTANDING ANYTHING IN THIS DOCUMENT, THERE CAN BE NO ASSURANCE THAT ANY APPLICATION ADHERING TO THE SUGGESTIONS SET FORTH HEREIN WILL BE SELECTED FOR ADDITIONAL DUE DILIGENCE AND NEGOTIATION OR WILL ULTIMATELY BE APPROVED BY DOE FOR A CONDITIONAL COMMITMENT OR A LOAN GUARANTEE. ALL DECISIONS BY DOE ON AN APPLICATION WILL BE BASED ON A COMPETITIVE EVALUATION USING THE PARTICULAR EVALUATION FACTORS SET FORTH IN THE SPECIFIC SOLICITATION. ALL DECISIONS BY DOE ON ANY PARTICULAR APPLICATION ARE FINAL AND NON-APPEALABLE.

THE TERMS OF THE APPLICABLE SOLICITATION WILL GOVERN THE EVALUATION PROCESS AND IN THE EVENT OF ANY INCONSISTENCY BETWEEN THIS DOCUMENT AND THE APPLICABLE SOLICITATION, THE SOLICITATION WILL CONTROL.

## **Financial Attributes**

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This section includes some of the key characteristics that can strengthen the financial review of Title XVII innovative clean energy project applications.

- **Third-party supply and off-take agreements.** Information on supply and off-take agreements supports revenue and cost projections – having a reliable source of raw materials or a buyer committed to purchasing the output of a project at a certain price provides significant comfort to a lender. Applications that do not include any third-party supply or off-take agreements may be compared unfavorably to applications that include such agreements in the financial review. These are helpful determinants of credit quality, even in draft form. The strongest applications will provide the following support:
  - Agreements for a term that matches the entire proposed tenor of the loan
  - Agreements with subsidiaries or third parties of strong credit quality
  - Agreements with independent third parties
- **Engineering, Procurement, and Construction (EPC) contracts.** Strong EPC contracts provide for liquidated damages and performance guarantees by the contractor, and are concluded with a large, established, creditworthy counterparty. While this may not be feasible in its entirety for every project, applications which lack an EPC contract, do not provide insight into key EPC terms, or which include contracts presenting highly variable costs, may be deemed weaker than comparable applications that include EPC contracts and/or terms.
- **Construction budgets.** Detailed construction budgets strengthen applications, particularly for innovative projects that may face increased risk of cost overruns. Applications that do not provide detail in their construction budgets often fail to specify the total cost of a plant as a single item, or may fail to provide for reserves or contingencies, among other omissions. This can weaken a project's financial assessment.
- **Identification of resources.** The strongest applications fully identify and account for all the resources necessary for a project to become fully operational, including capital goods, raw materials, O&M requirements and decommissioning. Failure to do this contributes to weakness in financial models and may result in overly optimistic project timelines and financial projections.
- **Permitting and Environmental Review.** Applicants should fully account for fulfilling permitting and environmental review requirements, particularly National Environmental Policy Act (NEPA) requirements, in project timelines. Acquiring the various local, state, and federal permits that may be needed to implement a project is often a time-consuming process. More guidance on NEPA and environmental requirements is available on the Loan Program Office's (LPO) website (<http://www.energy.gov/lpo/title-xvii-environmental-compliance>). Attachment B in LPO Title XVII solicitations provides more detailed information on environmental information to include in an application (<http://www.energy.gov/lpo/title-xvii-open-solicitations>).

- **Intellectual property (IP).** Strong applications will demonstrate clear rights to the IP necessary to implement the project. This is especially important in the case of innovative projects.
- **Access to IP in a default scenario.** Where proprietary technology is essential to the operation of a project, a willingness to assign those IP rights to the DOE as collateral in the event of default also strengthens the application. The purpose of providing DOE access to the company's IP is to allow DOE to continue operating the project in a default scenario.
- **Sources of equity.** Equity participation is a requirement of all loan guarantee applications, and applicants should clearly substantiate all sources of equity. The strongest applications demonstrate equity that is readily available and provided directly by the project sponsor or a combination of the sponsor and committed, creditworthy joint venture partners. Applications that rely on one or more of the following sources of equity, for example, may be viewed as comparatively weak:
  - Equity to be raised from unidentified / third parties
  - Equity contingent upon yet-to-be-generated revenues from earlier phases of the project
  - Equity contingent upon successful raisings of debt

Some projects plan to raise equity following receipt of a conditional commitment for a loan guarantee. This is not preferred by DOE; however it may be acceptable in some cases. Projects that have a substantial equity commitment prior to applying for a loan guarantee likely will rate higher for that criterion in the review process than projects that do not have a substantial equity commitment at the time of application.

- **Project sites.** Stronger applications both identify and demonstrate control over a project site, or document steps taken to establish control. Weaker applications do not identify host sites or are very early in the siting process.
- **Working financial model.** A working financial model is necessary for lenders to evaluate and validate the prospects for profitability of a project. All applications should contain a viable financial model. Key elements of a strong working financial model include:
  - A thorough explanation of the assumptions underlying the model, such as average production, costs and selling prices as appropriate
  - Reserve accounts for future expenses (e.g. major maintenance; decommissioning)
  - A structure that allows reviewers to access the model, test a range of assumptions and understand the process through which the model is expected to achieve its results.
- **Monetization of tax/regulatory incentives.** Tax credits and certificates that cannot be used by applicants should be monetized, or converted into cash. Strong applications demonstrate a clear strategy for the monetization of state and federal tax incentives. Appropriate monetization strategies could include off-take agreements for the sale of

Renewable Energy Certificates, or the confirmed participation of an equity provider with the tax capacity to make use of tax incentives.

- **Market and competition.** Strong applications will provide information on their markets and competition, including data to substantiate any claims made in the application. Useful information for such consideration includes average selling prices, segmentation (to the extent that it exists) and both historical and forward-looking market trends.

### ***Technical Attributes***

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This section includes some of the key characteristics that can strengthen the technical review of project applications.

- **Pilot / demonstration plant data.** In general, applicants proposing innovative projects should be able to submit a minimum of 1,000 to 2,000 hours of operating data from a demonstration facility that uses the same technology as proposed in the project application. This is essential to determining the project's capability to support a loan. Particularly in the case of innovative projects, weak applications may provide only limited pilot or demonstration plant data, or may provide data from a plant design that differs from the one proposed in the application.
- **Engineering reports.** All applications submitted by project sponsors or proposed borrowers should include a project-specific engineering report. Reports that discuss the general technology, rather than the use of that technology in the specific context of the project proposed, are of minimal assistance, especially in the evaluation of the technical and financial viability of an application proposing an innovative project
- **Technological advantages.** Applications required to satisfy Section 1703 of Title XVII should discuss and highlight how the technology as proposed in the project constitutes a new or significant improvement over existing competing technologies in the U.S. commercial marketplace today (e.g. cost, greenhouse gas emissions avoidance or reductions, etc.). Weaker applications proposing innovative projects may fail to provide this context.
- **Mitigation of technology risk.** Particularly in the case of innovative projects, strong applications will discuss how to mitigate technology risk. Stronger applications address alternative scenarios in the event that critical technologies fail or do not perform as expected. For example, applicants may address this risk through warranties, production or performance guarantees, corporate guarantees, letters of credit, performance bonds, etc.
- **Management Capability and key staff.** Applications should provide clarity on the applicant sponsor's capability and its key staff. In addition to the staff biographies, stronger applications should include management's experience, expertise, history, and organizational structure, as well as roles and responsibilities. Stronger applications explain how the experience and skills of key employees will uniquely contribute to the success of the proposed project.

## ***Administrative Suggestions***

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This section includes administrative suggestions for application submissions that will enable the LPO to review applications more efficiently.

Please note: These are suggestions, not requirements, and are not related to application evaluation criteria.

- **Searchable PDFs.** Searchable application PDF files are very helpful to reviewers. Generally, PDF files that are generated from word processing software are inherently searchable, whereas PDF files generated from printed, scanned documents are not.
- **Consolidation.** It is similarly helpful to reviewers if application materials submitted in response to a particular section of the application instructions are consolidated into as few PDF files as possible.

## **ATTACHMENT A – PART I SUBMISSION**

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The Application is divided into a Part I submission and a Part II submission. Part I of the Application provides DOE with a description of the Project, technical information, expected environmental effects, background information on management, financing strategy, and progress to date of critical path schedules. This information will be used as a basis for determining the overall eligibility of the Project and the Project's readiness to proceed. DOE will evaluate each Part I submission based upon the factors summarized herein, however, DOE may require that Applicants provide additional certifications or supporting documentation as part of the Project evaluation process. If an Applicant is invited to submit a Part II submission, to the extent that there are any material deviations from the information provided to DOE in the Part I submission, the Applicant must update the information.

The information requested in Part I Section A is to be entered directly into the text fields provided in the Application Portal. The information requested in Part I Sections B through H is to be provided on PDF or Excel documents uploaded through the Application Portal. **Uploaded documents must indicate clearly the section and subsection of the Part I requirement to which the information on the documents pertains.**

### **I. Part I Submission**

#### **A. Application Information**

1. **Project Information:** Enter the Project name, select the applicable technology category or categories (\_\_\_\_\_), and enter the Project/generation capacity (in Megawatts, Gallons per Year, Tons per Year, or Other).
2. **Project Location:** Enter the following information regarding one or more Project locations: address, city, state, zip code.
3. **Project Sponsor(s):** Enter the following information for each Project Sponsor with equity of five percent (5.0%) or more: indicate whether lead sponsor (must have one lead sponsor), entity name, website address, mailing address, city state, postal code, contact first name, contact last name, contact title/position, contact phone, and contact email.
4. **Applicant Information:** Enter the following information for the Applicant: Applicant entity name, website address, mailing address, city, state, postal code, DUNS number, NAICS code, primary contact information including first name, last name, title/position, phone, and email.
5. **Preliminary Questions:** Answer the following questions. If the answer to any of these questions is “No” include a detailed explanation of the circumstances that cause the answer to be “No” in the space provided.
  - a) Do you confirm you have read and understand the Loan Guarantee Solicitation Announcement from the U.S. Department of Energy Loan Programs Office regarding Federal Loan Guarantees for Advanced Nuclear Energy Projects?

- b) Is the Applicant legally authorized to enter into loan guarantee transactions and in good standing with the U.S. Department of Energy and/or any other federal agency loan guarantee program?
- c) Is the Applicant current on payment of all amounts owed to the federal government?
- d) Will the Project be built and operated entirely within the United States or its territories?
- e) Do you confirm that to the best of the Applicant's knowledge, after making diligent inquiry, that no Project participant has been charged with or convicted of a misdemeanor or felony (other than routine traffic violations) or been involved in any securities litigation?

6. **Summary of Loan Guarantee Request:** Enter the following information regarding the Applicant's loan guarantee request: requested period of guarantee (years), total Project Costs, proposed guarantee amount, debt, and equity. The sum of the amount entered for debt and the amount entered for equity should equal the amount entered for total Project Costs. The amount entered for the proposed guarantee amount should not be more than the amount entered for debt. On the basis of the above entered amounts, calculations will be made to determine the following amounts: debt to equity ratio, proposed guarantee amount to debt percentage, and proposed guarantee amount to total Project Costs percentage.

**B. Option to Restrict Disclosure and Use of Certain Data**

Section VII.D of the Solicitation sets forth the steps an Applicant must take in order to restrict the use and disclosure of certain data submitted in the Application. In order to restrict the use and disclosure of certain data submitted in Part I of the Application (to the extent permitted by applicable law) the Applicant must upload a separate page containing the legend set forth in Section VII.D.1 of the Solicitation. If the Applicant does not want to restrict the use and disclosure of any data submitted in the Application the Applicant must upload a separate page containing the following statement: "Applicant does not identify any data the use and disclosure of which is to be restricted."

**C. Organization (Corporate and Personnel)**

1. **Organizational Chart:** Provide a current corporate organizational chart showing the Applicant's relationship to any subsidiaries, affiliates, parent organizations, or joint ventures associated with the Project. Show the Applicant's relationship to each Principal. For the purpose of this Solicitation, a "Principal" is any person who owns or will own five or more percent of the Project.
2. **Key Staff:** List the full names (including middle name or initial) of key staff to be involved with the Project.
3. **Evidence of Authority:** Submit evidence that the signatory of the Application has authority to bind the Project Sponsor to the commitments and representations made in the Application and attests as to the accuracy of the information provided in the Application process.

#### **D. Project Description**

1. **Executive Summary:** Provide a description of the nature and scope of the Project, including the technology, site, environmental resources affected, purpose, size, capacity, design features, key metrics, and key milestones. Describe the commercial feasibility of the technology(ies) and how you intend to employ such technology(ies) in the Project and how you assure, to the extent possible, the further commercial availability of the technology(ies) in the United States. Include target dates for:
  - a) financial close of the Loan Guarantee Agreement;
  - b) commencement of site preparation and construction;
  - c) commercial operation; and
  - d) marketing the output.
2. **Project Eligibility:** Provide a detailed explanation of how and to what extent the Project will qualify as an Eligible Project. DOE will base its determination that the Project is an Eligible Project on the information the Applicant furnishes in its Part I submission. Applicants are encouraged to be thorough in their explanations of a Project's qualification as an Eligible Project, including a discussion of the threshold determinations set forth in Section 609.7(a) of the 1703 Regulations, all of the eligibility requirements of Title XVII of the 1703 Regulations, and all of the eligibility requirements listed in Section II of the Solicitation, "Eligibility Information".
3. **Project Sponsors' and Principals' Capabilities:** Describe each Project Sponsor's and each Principal's capabilities, financial strengths, investment in the venture to date and as anticipated during the construction and operation phases of the venture (i.e., continuing financial support) and proposed equity investment in the Project, as well as the Project's strategic significance to each Project Sponsor and Principal.
4. **Prior Experience:** Summarize the prior experience of each venture participant as it relates to carrying out undertakings similar to the one being proposed. Include a detailed description of current and previous experience with Advanced Nuclear Energy Projects. Applicants must, at a minimum, describe (a) examples of at least two projects in the Advanced Nuclear Energy Projects sector similar in nature and scope (whether innovative or not) to the Project being proposed that have been completed (developed, financed, and managed construction) by the Applicant's organization or its Principals, and (b) examples of at least two projects in the Advanced Nuclear Energy Projects sector for which the Applicant's organization or Principals raised equity and secured debt for project financing, and (c) examples of at least two projects in the Advanced Nuclear Energy Projects sector for which the Applicant's organization was responsible for managing the operations and maintenance of a project for a minimum of two years. Each project example must be a project for which construction has been completed. Applicants that are not able to include examples of two projects in their description of current and previous experience in the Advanced Nuclear Energy Projects sector should provide a detailed description of the facts that they believe are sufficient to demonstrate to DOE that they have the expertise that would be evidenced in current or previous experience in the Advanced Nuclear Energy Projects sector by examples of two projects.

DOE will determine, in its sole and final judgment, whether the experience described shows sufficient expertise.

5. **Project Costs:** Provide the estimated total Project Costs, as defined in Sections 609.2 and 609.12 of the 1703 Regulations, and a summary detailing key assumptions and the methodology used to calculate the Project Costs. Include all eligible costs that you have paid and expect to pay and that are directly related to the Project. Also include costs for escalation and contingencies in this calculation. Distinguish between eligible and ineligible Project Costs as set forth in Section 609.12 of the 1703 Regulations.
6. **Letters of Interest:** Provide a letter of interest for all parties named in Section I.A.

#### **E. Technical Information**

Provide a top-level technical Project description, including the design, engineering, construction, and operations and maintenance phases of the Project, including:

1. **Description of Project Design:** A description of the basic processes involved in the Project design.
2. **Description of New or Significantly Improved Technology:** A detailed description of the New or Significantly Improved Technology to be used in the Project, and a description of how and why the technology is new or significantly improved compared to technology already in general use in the commercial marketplace in the United States.
3. **Sketches:** Conceptual level sketches and details outlining general plant layout, process and materials flows, and operating parameters and throughputs for key processes.
4. **Critical Path Agreements Status:** The status of critical path contracts and agreements, such as a Front-end engineering agreement, technology license and teaming agreements, Engineering, Procurement and Construction (“EPC”) contract, long-lead contracts, feedstock agreements, and plant off-take or sales agreements.
5. **Planning Documents:** Key planning documents for the Project such as the construction plan, operation and maintenance plan, waste disposal plan, and preliminary risk management plan.
6. **Acquisition Strategies:** Raw material, equipment, and component supply chain acquisition strategies.
7. **Attachment C:** A completed copy of Attachment C, Summary Lifecycle GHG Emissions Data Worksheet.

#### **F. Legal and Regulatory Information**

1. **Timelines for Regulatory Approval:** Provide timelines for receipt of all required regulatory approvals.
2. **Status of Required Permits, etc.:** Provide the status of any required federal, state, or local environmental permits, approvals, or reviews.

3. **Pending Investigations:** Provide a summary of any pending or threatened (in writing) action, suit, proceeding, or investigation by a governmental authority, of any kind, including any action or proceeding by or before any governmental authority, that relates to the Project or to the Applicant, any Project Sponsor, any Principal, or the anticipated Borrower, and the status of any appeals.

#### **G. Business and Financial Plans**

1. **Business Plan:** Provide a description of the following elements of the Applicant's business plan for the Project:
  - a) Market analysis;
  - b) Feedstock (if applicable);
  - c) Off-take or sales agreements; and
  - d) Estimate of the number of construction jobs and permanent jobs expected to be created or retained in the United States if the Project were to proceed as proposed in the Application.
2. **Financial Plan:** Provide a description of the following elements of the Applicant's proposed financial plan for the Project:
  - a) The term sheet for the Guaranteed Obligation;
  - b) The amount of expected equity investments (identify participants and level of participation, if applicable);
  - c) The preliminary funding plan for the Guaranteed Obligation, including the total amount for (i) working capital financing, (ii) medium-term financing for machinery and equipment and (iii) longer-term financing for the site and facility;
  - d) The timing of expected equity contributions and debt funding;
  - e) The timing of repayment of expected debt funding;
  - f) Whether the Project will benefit directly or indirectly from certain other forms of federal support, such as grants or other loan guarantees from federal agencies or entities, including DOE, federal agencies or entities as a customer or off-taker of the Project's products or services, or other federal contracts, including acquisitions, leases and other arrangements, that support the Project; and
  - g) Other non-federal governmental (including state) incentives or other assistance on which the Project relies, including grants, tax credits and other loan guarantees to support the financing, construction and operation of the Project. Indicate whether any such incentives or assistance are subject to clawback and the circumstances under which a clawback could occur.

#### **H. Application Certifications**

1. **Lobbying, Debarment, and Related Certifications and Assurances:** In submitting an Application for a loan guarantee under Title XVII, Applicants must provide certain certifications and assurances contained in the form entitled "Certifications for Use with Applications for Department of Energy Loan Guarantees under title XVII of the Energy Policy Act of 2005" which form may be downloaded from the Program Website: <http://energy.gov/sites/prod/files/Certifications%20for%20Use%20with%20Doe%20Loan%20Guarantees.pdf>
2. **Applicant Validation Statement:** Provide a written statement that, based on the Project information provided by the Applicant, the Applicant attests that there is a reasonable prospect that the guaranteed portion of the Guaranteed Obligation and any other Project debt will be repaid on time and in full (including interest) from Project cash flow according to the terms proposed in the Application.
3. **Letter of Commitment:** For an Application to be considered under this Solicitation, Part I must include a letter of commitment signed by an authorized representative of the Applicant in the form set forth on the final page of Attachment A – Part I Submission.
4. **Penalty of Perjury Statement:** The following certification must be included with each Application:

"The undersigned certifies that the data and information submitted and the representations made in this Application and any attachments to this Application are true and correct, to the best of the Applicant's knowledge and belief after due diligence, and the Applicant has not omitted any material facts. The undersigned further certifies that [s]he has full authority to bind the Applicant."

---

Applicant (Organization Name)

---

Name of Applicant's Authorized Officer  
(will fulfill on-line certification)

---

Signature of Authorized Officer  
(for paper copy only)

---

Title of Authorized Officer  
Applicant (Organization Name)

---

Date"

[SAMPLE LETTER OF COMMITMENT]

[DATE]

Executive Director  
U.S. Department of Energy, Loan Programs Office  
Attn: Advanced Nuclear Energy Projects Applications  
1000 Independence Avenue, SW  
Washington, DC 20585

Dear Director:

This letter confirms our intent to seek a loan guarantee pursuant to Solicitation No. DE-SOL-0007791, dated December 10, 2014 (the "Solicitation"). We have met all mandatory requirements as specified in the Solicitation including all attachments. Our Part I submission Application Fee was wired as per your instructions on xx/xx/201\_\_.

We intend to submit our complete Part II submission on or before the due date for the [specify round by number and/or Part II submission due date] round of Part II reviews as set forth in Section IV.A of the Solicitation. Based on the Application process described in the Solicitation, we are prepared to close the financing on or about xx/xx/201\_\_.

If we decide to withdraw from consideration for a loan guarantee at any time, we will notify DOE in writing of that decision as soon as possible.

Sincerely,

---

Signature of Authorized Officer  
[Name]

## **ATTACHMENT A – PART II SUBMISSION**

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Subject to the due dates set forth in Section V.A of the Solicitation, the Part II submission may be filed at any time after DOE invites an Applicant to submit its Part II submission. The Part II submission consists of the items summarized herein and in Attachment B as well as other information that may be requested to facilitate DOE's continued due diligence review. Projects eliminated by any of the requirements set forth in Part II of this Attachment A will not receive any further consideration.

At any time after delivery of a Part II submission, to the extent that there are any material deviations from the information provided to DOE in such Part II submission, the Applicant must notify DOE no later than three (3) business days after becoming aware of any such change by requesting approval from DOE to update their Part II submission via the Application Portal. Applicant must provide DOE with updated information via the Application Portal no later than ten (10) business days after receiving notice from DOE to Applicant of approval to re-open Applicant's Application.

Responses are to be provided on PDF or Excel documents uploaded through the Application Portal. **Uploaded documents must indicate clearly the section and subsection of the Part II requirement to which the information on the documents pertains.**

### **I. Part II Submission**

#### **A. Option to Restrict Disclosure and Use of Certain Data**

Section VII.D of the Solicitation sets forth the steps an Applicant must take in order to restrict the use and disclosure of certain data submitted in the Application. In order to restrict the use and disclosure of certain data submitted in Part II of the Application (to the extent permitted by applicable law) the Applicant must upload a separate page containing the legend set forth in Section VII.D.1 of the Solicitation. If the Applicant does not want to restrict the use and disclosure of any data submitted in the Application the Applicant must upload a separate page containing the following statement: "Applicant does not identify any data the use and disclosure of which is to be restricted."

#### **B. Updates, Changes, and Additions to Part I Submission**

Update the information in the Part I submission to the extent and information in the Part I submission has changed from the information previously submitted. Provide a detailed description of all material amendments, modifications, and additions to the information provided in Part I of the Application, including any changes in the Project's financing structure or other terms, the rationale for such changes and the expected impact on the Project. Provide any and all updated audited financial statements since the submission of Part I of the Applicant and Project Sponsors (including new parties joining the Project since the Part I submission).

#### **C. Submission Index**

Provide an index of all of the requirements contained in this Solicitation and in Section 609.6 of the 1703 Regulations and where in your Application submissions, including Parts I and II, these requirements are addressed.

#### **D. Project Description**

1. **Detailed Total Cost:** Provide a detailed estimate of Project Costs in accordance with generally accepted accounting principles and practices. Include a breakdown by cost category, year of

expenditure and basis for amounts, and include a description of the methodology and key assumptions used to make each estimate. Also include costs for escalation and contingencies, and indicate whether each cost is firm or subject to change. Distinguish between eligible and ineligible Project Costs as set forth in Section 609.12 of the 1703 Regulations.

2. **State and Local Support:** Describe the status of potential and actual forms, amounts, and conditions of state and local support for the Project. Provide timelines for such assistance.
3. **Project Location:** Identify the proposed location in the United States and the rationale for the site location. An Applicant proposing more than one location for a Project must set forth in its Application its justification for siting the Project in more than one domestic location.
4. **Effect on Anthropogenic Emissions:** Describe how and to what measurable extent the Project avoids, reduces, or sequesters anthropogenic emissions of greenhouse gases, including how to measure and verify those benefits.

#### **E. Technical Information**

1. **Key Contracts and Agreements:** Provide a top-level description, schedule, current status, and drafts or executed copies of all critical path contracts and agreements relevant to the investment, design, engineering, financing, construction, startup, commissioning, shakedown, operation, and maintenance of the Project, including:
  - a) EPC contract(s);
  - b) Long-term contracts for materials, components and equipment to be used in the Project;
  - c) Any leases, operating, or maintenance contracts; and
  - d) Any additional relevant agreements or commitments.

If drafts or executed copies of any of the foregoing contracts and agreements are unavailable, provide a detailed description of such contracts and agreements, including all key terms and counterparties, and indicate when copies of such contracts and agreements will be available.

2. **Engineering and Construction Plans:** A detailed description of the engineering and design contractor(s), EPC contractor(s), equipment supplier(s), and construction schedules for the Project.
  - a) For each engineering and design contractor, EPC contractor and equipment supplier to be involved in the Project, describe their major activities as linked to specified cost milestones and performance guarantees, as well as performance guarantees, performance bonds, liquidated damages provisions, and equipment warranties to be provided.
  - b) Describe the following:
    - (i) The extent to which all required contractors are engaged; and
    - (ii) The extent to which pre-construction design has been completed.
  - c) Describe each contractor or supplier's experience and qualifications as related to the Project.

3. **Key Site Components:** Describe the key site components of the Project and risks associated with their availability (e.g., water, electricity, gas, or other utilities). Describe site access (roads, highway, and rail) including rights-of-way, easements, and logistical considerations.
4. **Operation Costs:** Provide an estimate of operation costs on an annual basis.
5. **Project Plan:** Provide a comprehensive Project plan that will guide design, engineering, and construction of the Project, including a description of:
  - a) Prior successful implementation of similar project plans for projects of this scale by the Applicant or any Project Sponsor (Applicants that are not able to include examples of successful implementation of similar project plans for projects of this scale should provide a detailed description of the facts that they believe are sufficient to demonstrate to DOE that they have the expertise that would be evidenced in examples of successful implementation of similar project plans for projects of this scale. DOE will determine, in its sole and final judgment, whether the experience described shows sufficient expertise);
  - b) Each step of the proposed process;
  - c) Fully sourced or cited material and energy balance, including system simulation for processes, using industry standard software;
  - d) The process for selecting an EPC firm, if applicable, or the internal resources used to serve this function;
  - e) Equipment requirements;
  - f) Rights or licenses to use processes proposed;
  - g) An integrated schedule or Project work plan that encompasses time periods for design, procurement (including long-lead procurements), construction (including mobilization, testing and start-up), and commissioning. The Project shall identify any Project dependencies such as the timing of land-use agreements, environmental permits, or licenses, or physical improvements such as utility tie-ins.
  - h) Minimum design specifications in which process flow diagrams are coupled to preliminary cost estimates.
  - i) Project management tools, including Gantt charts, resource-based scheduling or other methods to assess and track progress;
  - j) Staffing plans, including identification of costs and resources to design, engineer, construct, and operate the Project;
  - k) Project risks and mitigation strategies, including risk related to scale-up, construction, performance, etc. and the potential Project impact and mitigation of such risks; and
  - l) Contingency plans to address cost overruns and schedule slippage.

**6. Operating and Maintenance Plans:** Provide the following:

- a) The plant operating plan, proposed providers, expected staffing requirements, anticipated parts inventory, major maintenance schedules, estimated annual downtime and any performance guarantees and related liquidated damages provisions;
- b) A description of the plans for commissioning and initial operations, taking into account the construction schedule, the establishment of material supply chains, the hiring, and training of management and operating personnel, logistics, potential bottlenecks, and delays, financing for contingencies and working capital;
- c) A description of any plans for expanding capacity over initial operations and the Applicant or the Project Sponsor's experience with comparable ramp-ups; and
- d) A description of the operations and maintenance plans for the Project, including acquisition of critical spares, inventory sources, operations and maintenance procedures, and associated risks.

**7. Engineer's Report:** Provide an independent engineer's report that includes a review, evaluation, analysis, and recommendations in the following areas:

- a) base technology;
- b) Project feasibility;
- c) engineering and design approach;
- d) integrated Project schedule, including the schedule for completion;
- e) cost estimates and technical input to the financial model;
- f) contractual requirements and arrangements;
- g) proposed supply chain;
- h) Project risks, including mitigation activities and milestones;
- i) direct labor requirements during construction and operation;
- j) siting and permitting;
- k) testing and commissioning;
- l) operation and maintenance; and
- m) decommissioning plan and costs.

**8. Decommissioning Plan:** Provide a detailed description of the Project decommissioning, deconstruction, and disposal plans (including any hazardous waste disposal plans), including anticipated costs and arrangements that have been made to ensure that funding will be available as necessary.

## **F. Legal and Regulatory Information**

1. **Legal Opinions/Material Reports:** Provide a copy of all applicable legal opinions, and other material reports, analyses and reviews concerning the Project.
2. **Permits and Approvals:** Provide a complete list of federal, state, and local permits, licenses, and approvals required to site, construct, implement, and operate the Project, including environmental authorizations or reviews necessary to commence construction. For permits and approvals already received, provide the filing and approval dates and parties involved. For all remaining required permits and approvals, provide documentation validating the filing date and the expected date(s) for obtaining them and describe all additional actions required to obtain such permits and approvals. Explain whether governmental entities (other than DOE) are required to approve the activities of the Applicant contemplated by this Solicitation or described in the Application.
3. **Background and Legal Structure:**
  - a) Describe the organizational history, ownership chain, and legal structure (e.g., corporation, partnership, or LLC) of the Applicant and each Project Sponsor.
  - b) Include copies of the statutory authorities under which the Applicant and each Project Sponsor were created and copies of the good standing certificates for each such entity.
  - c) Provide a current organizational chart showing the Applicant's relationship to each Project Sponsor, the venture and to any subsidiaries or affiliates. Advise if there are any proposed changes to the current organizational structure of the Applicant.
  - d) Describe whether the Project will be owned by a subsidiary of the Applicant or directly by the Applicant.
4. **Legal Authority:** Describe the legal authority of the Applicant to carry out the Project activities. Provide supporting documentation.
5. **Litigation and/or Conflicts:** Disclose any current, threatened (in writing), or pending litigation involving the Applicant, a Principal, or, to the Applicant's knowledge, any other relevant party, related to permitting, public involvement, environmental issues, construction defects, fraud, securities fraud, conflict of interest, failure to perform under a local, state or federal contract, or other charges which may reflect on the Applicant's, Principal's, or any Project Sponsor's reputation, financial position or ability to complete the Project.
6. **Potential Environmental Impacts:** Submit a report containing the status of all state and local environmental reviews and an analysis of the potential environmental impacts and risks of the Project in sufficient detail to enable DOE to assess the significance of the environmental impacts and risks and to determine the level of environmental review that will be required. See Attachment B for guidance regarding required environmental information for the NEPA review process.

## **G. Business Plan**

Provide a business plan that demonstrates the Applicant's expertise, financial strength, and management capability to undertake and operate the Project as proposed.

1. **Output:** Provide a detailed description of the Project's output.

2. **Applicant's Capability:** Describe in detail the capabilities and experience of the Applicant and each Project Sponsor, Principal, contractor, and every other counterparty that the Applicant believes will enable the Project to be successful.
3. **Market Analysis:**
  - a) Include an analysis of the current and projected market for the Project's output. Discuss the prevailing economic and demographic trends in the target market, both on a macroeconomic basis and for the Project's output. Identify the market's dependency on tax benefits or other government policy. Provide a justification for revenue projections (price and volume) and costs. Describe the Project's projected customer base and suppliers.
  - b) Describe the Applicant's current and potential competitors for the Project's output.
  - c) Provide a detailed description of any competitive advantages.
4. **Operating and Market-Related Risks and Mitigation Strategies:** Provide a detailed analysis of the operating and market-related risks associated with the Project (e.g., market factors, price volatility, etc.) and mitigation strategies to be employed (e.g., sales contracts and reserves).
5. **Management Plan:**
  - a) Provide a staffing chart indicating the individuals (including position and qualifications) proposed to operate the Project. Provide a description of the management plan of operations to be employed in carrying out the Project, and information concerning the management experience of each officer or key person associated with the Project; and
  - b) Describe the role of management in the operation of the Applicant's other businesses, if any.
6. **Supply and Sales Arrangements:**
  - a) Provide a detailed analysis of the market for the Project's feedstock and output;
  - b) Provide a detailed description of the Project's plans for ensuring an adequate supply of materials, equipment, and components as needed for successful operation. Provide drafts or executed copies of all material supply contracts for the Project;
  - c) Provide the Project's forecast for sales capacity and feedstock (availability and costs);
  - d) Provide drafts or executed copies of all feedstock agreements and sales contracts or other revenue-generating agreements that will provide revenue for the Project. Provide an analysis of the creditworthiness of counterparties who are party to such agreements; and
  - e) Provide copies and detailed summaries of all other material sales and revenue contracts.
7. **Insurance Coverage:** Provide a detailed description of the proposed insurance coverage for the Project, together with a report from an insurance consultant that addresses the appropriateness and adequacy of such coverage.
8. **Growth Plan:** Describe any proposals for expanding the business enterprise beyond the Project.
9. **Jobs Created/Retained:** Provide a brief description of the number and types of jobs expected to be created or retained in the United States if the Project were to proceed as proposed in the

Application. The types of jobs may be expressed using job titles, broad labor categories, or the Applicant's existing practice for describing jobs provided that the descriptions so provided are commercially identifiable. The number of jobs shall be expressed as full-time equivalent, calculated cumulatively as all hours worked divided by the total number of hours in a full-time schedule, as defined by the Applicant. Applicants should include in their narrative the information used to calculate the full-time equivalent figure.

## **H. Financial Plan**

1. **Financial Statements:** Provide unaudited financial statements for the Applicant for the past two years (or since inception of the Applicant has not been in existence for at least two years), prepared in accordance with generally accepted accounting principles in the United States ("U.S. GAAP"). Include all associated notes and describe business and financial interests of controlling or commonly controlled organization or persons, including parent companies, subsidiaries, and other affiliated entities or partners of the Applicant or Project Sponsors.
2. **Project Financial Model and Analysis:**
  - a) Include a working financial model (with formulas) with pro-forma financial statements for the Project. List the major assumptions in a separate worksheet within the model.
    - (i) Include assumptions and calculations for the proposed tenor of the Guaranteed Obligation, plus two (2) years.
    - (ii) Include detailed income statements, balance sheets, cash flow statements, and waterfall statements.
    - (iii) Include financial ratios (e.g., interest coverage ratios, fixed charge coverage ratios, debt-to-capital ratios, asset coverage ratios, and working capital ratios (including high and low points)) and other relevant terms in the proposed term sheet. Highlight those periods during construction and operation in which non-compliance with the proposed financial ratios is most likely.
    - (iv) Include sensitivity analyses that demonstrate the Project's performance under appropriate stress scenarios, including low sales prices, reduced Project performance, loss of major customers, high input material prices, and the impact of future competing technologies.
    - (v) Include cost assumptions based on compliance with the Davis-Bacon Act.
    - (vi) Include a complete description of the operational and financial assumptions and methodologies incorporated in the financial model.
  - b) The financial analysis should demonstrate that there is reasonable prospect that the Applicant will be able to repay the principal and interest on the Guaranteed Obligation and any other Project debt incurred. Discuss the principal factors that could impair the Applicant's ability to meet its debt service obligations, including the Guaranteed Obligation.
3. **Detailed Financial Plan:** Provide a detailed financial plan for the Project, prepared in accordance with U.S. GAAP.
  - a) List all proposed sources of expected equity and debt funding by provider, type, and aggregate amount, and provide a copy of the financial closing checklists for each financing, if available.

- b) Describe uses, timing, and amount of expected equity and debt funding.
- c) For each party associated with the Project, provide a detailed description of their projected liabilities over the term of the Loan Guarantee Agreement.
- d) Include a summary of any funding intended to be procured through the use of special purpose entities. Summarize each tranche of funding (e.g., amount, maturity, amortization schedule, the proposed loan guarantee percentage, and whether it is a fixed- or floating-rate tranche).
- e) Include a summary of any funding that will be tax-advantaged debt to which Section 149(b) of the Internal Revenue Code may be applicable. Summarize measures that will be taken to avoid (i) effective subordination of federally guaranteed debt to tax-advantaged debt, (ii) the use of any federal guarantee as collateral to secure tax-advantaged debt, and (iii) any linkage of federally guaranteed debt with tax-advantaged debt.
- f) Include a schedule indicating all anticipated short term financing or credit facilities required for on-going operations of the Project, including all working capital facilities, performance bonds and similar forms of financing available to or anticipated to be available to the Project. Describe the nature of the security or collateral that is intended to be made available to secure these working capital and other short term facilities.

4. **Proposed Term Sheet:** Include a proposed term sheet for the Guaranteed Obligation.

5. **Credit History:** Provide the credit history of the Applicant and any business entity owning or controlling a five percent (5%) or greater interest in the Project or the Applicant, the offtaker(s), the feedstock supplier, if applicable, and the EPC contractor. Provide the full name of the entity, address, and date of organization.

6. **Collateral:** Provide a listing, describe, and value all assets associated, or to be associated, with the Project and any other assets that will serve as collateral for the Guaranteed Obligations, including any intellectual property necessary for the operation of the Project. Valuations must be supported by independent, third-party appraisals for existing assets and commercial cost substantiation for assets to be constructed for the purpose of the Project, and in all cases acceptable to DOE. An appraisal of real property must be performed by a licensed or certified appraiser consistent with the Uniform Standards of Professional Appraisal Practice promulgated by the Appraisal Standards Board of the Appraisal Foundation. The appraisal should include information on the useful life of all physical assets expected to serve as collateral, including a depreciation schedule (prepared in accordance with U.S. GAAP).

7. **Consideration of Pari-Passu Status:** Provide information and financing documents regarding any existing senior secured debt of any party providing a guarantee or other credit support.

8. **Preliminary Credit Assessment:** Provide a preliminary credit assessment for the Project from a nationally recognized rating agency.

- a) If the Project will be financed using a corporate financing structure or will benefit from any third-party guarantees, provide a detailed public or private credit assessment of the Borrower and Project Sponsor or such third-party guarantor. Such assessment should take into account the impact of the proposed transaction on the Borrower and Project Sponsor or such third-party guarantor's credit rating and evaluate the Project Sponsor or third-party guarantor's financial viability in the absence of a DOE loan guarantee or any other credit support.

b) If the Project will be financed using a project financing structure, provide a detailed public or private credit assessment of the Project. Such assessment should evaluate the Project in the absence of a DOE loan guarantee or any other credit support.

9. **Other Financial Information:** Include any other information about the Applicant and any Project Sponsor that provides a comprehensive summary of the Applicant or Project Sponsor's business and financial situation, including specific information relevant to analyzing historical cash flow on a secular, normalized basis.

## I. Certifications

1. **Lobbying, Debarment, and Related Certifications and Assurances:** In submitting an Application for a loan guarantee under Title XVII, Applicants must provide certain certifications and assurances contained in the form entitled "Certifications for Use with Applications for Department of Energy Loan Guarantees under title XVII of the Energy Policy Act of 2005" which form may be downloaded from the Program Website:  
<http://energy.gov/sites/prod/files/Certifications%20for%20Use%20with%20Doe%20Loan%20Guarantees.pdf>
2. **Applicant Validation Statement:** Provide a written statement and supporting analysis attesting that, based on the information provided to DOE, there is a reasonable prospect that all debt of the Project (including the Guaranteed Obligation) will be repaid on time and in full (including interest) from cash flow generated by the Project and in accordance with the terms proposed in the Application.

As part of the Project evaluation process, DOE may require that Applicants provide additional certifications or supporting documentation. DOE is not authorized to issue a loan guarantee to any party that is delinquent on federal debt, including federal tax debt.

3. **Penalty of Perjury Statement:** The following certification must be included with each Application:

"The undersigned certifies that the data and information submitted and the representations made in this Application and any attachments to this Application are true and correct, to the best of the Applicant's knowledge and belief after due diligence, and the Applicant has not omitted any material facts. The undersigned further certifies that [s]he has full authority to bind the Applicant.

---

Applicant (Organization Name)

---

Name of Applicant's Authorized Officer  
(will fulfill on-line certification)

---

Signature of Authorized Officer  
(for paper copy only)

---

Title of Authorized Officer

Date”

**Rokebrand, Celtia R. (CONTR)**

---

**From:** Eckard, J. M <jeckard@firstenergycorp.com>  
**Sent:** Friday, February 16, 2018 5:32 PM  
**To:** McCormack, Brian  
**Cc:** Menezes, Mark;Winberg, Steven;Hynes, Shaylyn  
**Subject:** RE: News Release - FirstEnergy to Deactivate Pleasants Power Station in West Virginia

Here's another answer to one of Mr. Menezes' difficult questions: the capacity factor for the Pleasants Power Station in 2017 was 68.56%. That means it ran over two-thirds of the hours throughout the year. My guess was reasonably close. As we speculated though, much of the time the plant was barely covering its marginal cost of production with no contribution to fixed costs. Have a great weekend.

Mike

J. Michael Eckard  
Director, Federal Affairs  
FirstEnergy  
801 Pennsylvania Ave., Suite 310  
Washington, D.C. 20004  
202.434-8153  
202.434-8156 (fax)  
(b) (6) (cell)  
[jeckard@firstenergycorp.com](mailto:jeckard@firstenergycorp.com)



---

**From:** Eckard, J. M  
**Sent:** Friday, February 16, 2018 11:26 AM  
**To:** 'McCormack, Brian' <Brian.Mccormack@hq.doe.gov>  
**Cc:** Menezes, Mark <Mark.Menezes@hq.doe.gov>; Winberg, Steven <Steven.Winberg@hq.doe.gov>; Hynes, Shaylyn <Shaylyn.Hynes@hq.doe.gov>  
**Subject:** RE: News Release - FirstEnergy to Deactivate Pleasants Power Station in West Virginia

Thanks to each of you. Call me on my cell ((b) (6)) if you want to discuss further.

Mike

J. Michael Eckard  
Director, Federal Affairs  
FirstEnergy  
801 Pennsylvania Ave., Suite 310  
Washington, D.C. 20004  
202.434-8153  
202.434-8156 (fax)  
(b) (6) (cell)  
[jeckard@firstenergycorp.com](mailto:jeckard@firstenergycorp.com)



**From:** McCormack, Brian [mailto:[Brian.Mccormack@hq.doe.gov](mailto:Brian.Mccormack@hq.doe.gov)]  
**Sent:** Friday, February 16, 2018 11:23 AM  
**To:** Eckard, J. M <[jeckard@firstenergycorp.com](mailto:jeckard@firstenergycorp.com)>  
**Cc:** Menezes, Mark <[Mark.Menezes@hq.doe.gov](mailto:Mark.Menezes@hq.doe.gov)>; Winberg, Steven <[Steven.Winberg@hq.doe.gov](mailto:Steven.Winberg@hq.doe.gov)>; Hynes, Shaylyn <[Shaylyn.Hynes@hq.doe.gov](mailto:Shaylyn.Hynes@hq.doe.gov)>  
**Subject:** [EXTERNAL] RE: News Release - FirstEnergy to Deactivate Pleasants Power Station in West Virginia

Thanks for sending Mike.

---

**From:** Eckard, J. M [mailto:[jeckard@firstenergycorp.com](mailto:jeckard@firstenergycorp.com)]  
**Sent:** Friday, February 16, 2018 11:20 AM  
**To:** McCormack, Brian <[Brian.Mccormack@hq.doe.gov](mailto:Brian.Mccormack@hq.doe.gov)>  
**Subject:** FW: News Release - FirstEnergy to Deactivate Pleasants Power Station in West Virginia

Please share. The release was issued as we spoke. Answers to your questions: 1. 100% supplied by Alliance Resources from a West Virginia mine and 2. Pleasants is a non-union plant. (I stand corrected.) Thanks. I'll likely give you another call early next week.

Mike

J. Michael Eckard  
Director, Federal Affairs  
FirstEnergy  
801 Pennsylvania Ave., Suite 310  
Washington, D.C. 20004  
202.434-8153  
202.434-8156 (fax)  
(b) (6) (cell)  
[jeckard@firstenergycorp.com](mailto:jeckard@firstenergycorp.com)



---

**From:** FE News  
**Sent:** Friday, February 16, 2018 11:02 AM  
**Subject:** News Release - FirstEnergy to Deactivate Pleasants Power Station in West Virginia

*The attached news release was distributed to the media at 11:00 a.m.*

---

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**Flores, Paola (CONTR)**

---

**From:** Moul, Donald A <dmoul@firstenergycorp.com>  
**Sent:** Monday, March 26, 2018 4:12 AM  
**To:** Dowling, Michael J.  
**Cc:** Winberg, Steven;Mendenhall, Kelley E  
**Subject:** Re: [EXTERNAL] JET presentation

Thanks Steve!

I've forwarded this information to our advisors that are dealing with potential asset sales or investments. We will see if it progresses. I really appreciate the lead.

Regards,  
Don

Don Moul  
President & CNO  
FirstEnergy Solutions Generation Companies  
Work: 330-315-6800  
Cell: (b) (6)

> On Mar 25, 2018, at 11:39 PM, Dowling, Michael J. <dowlingm@firstenergycorp.com> wrote:  
>  
> Thanks, Steve. Much appreciated.  
>  
> Michael J. Dowling  
> Senior VP, External Affairs  
> FirstEnergy  
> 330-384-5761 office  
> (b) (6) mobile  
>  
>> On Mar 22, 2018, at 2:57 PM, Winberg, Steven <Steven.Winberg@hq.doe.gov> wrote:  
>>  
>> Don, Mike and Kelly  
>>  
>> First, thank you for meeting with DOE a few weeks ago. I was disappointed to hear the news about Pleasants since I started both of those units early in my career.  
>>  
>> I sat in on a presentation by a Chinese firm called JET that has an ammonia-based process for SOx control that produces a fertilizer product with no liquid waste stream.  
>> They claim that they will build and operate and will consider build, own and operate.  
>> Neither DOE nor I are endorsing this technology but I did recall the challenges at Bruce Mansfield (from my days at CONSOL) and thought that I would pass this along to you.  
>> JET's contact info is in the attached presentation.  
>>  
>> All the best,  
>>

>> Steven Winberg  
>> Assistant Secretary  
>> Office of Fossil Energy  
>> Department of Energy  
>> 1000 Independence Avenue, SW  
>> Washington, DC 20585  
>> 202 586 6660  
>>  
>>  
>> <170316 JET - DOE presentation - Final.pptx>

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**Flores, Paola (CONTR)**

---

**From:** Winberg, Steven  
**Sent:** Thursday, March 22, 2018 2:57 PM  
**To:** dmoul@firstenergycorp.com;mendenhallk@firstenergycorp.com;dowlingm@firstenergycorp.com  
**Subject:** JET presentation  
**Attachments:** 170316 JET - DOE presentation - Final.pptx

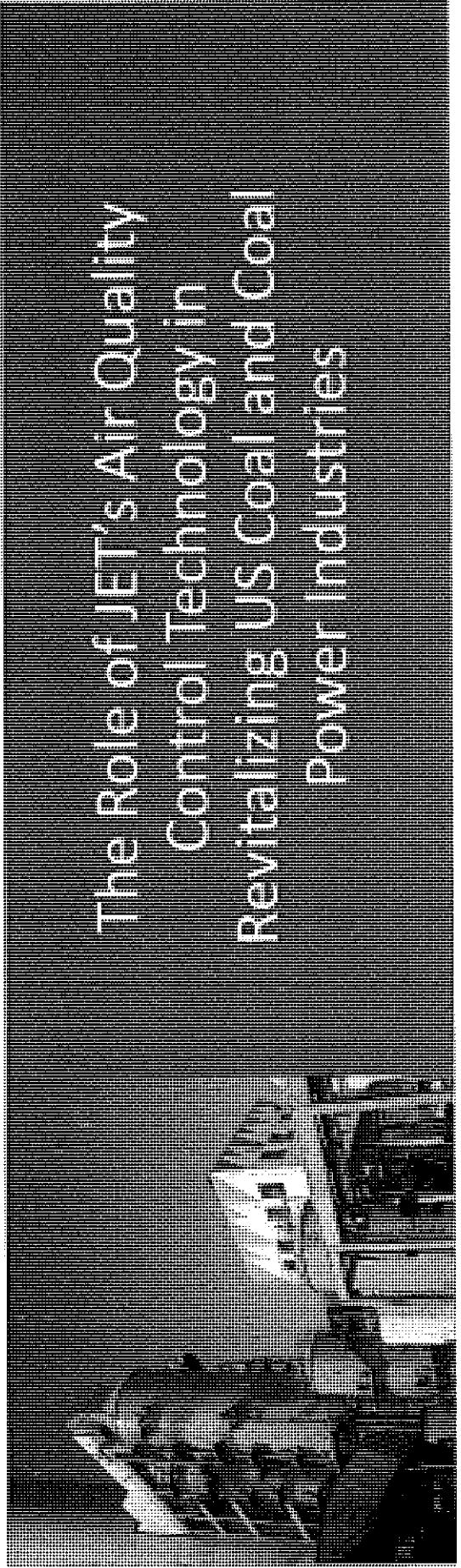
Don, Mike and Kelly

First, thank you for meeting with DOE a few weeks ago. I was disappointed to hear the news about Pleasants since I started both of those units early in my career.

I sat in on a presentation by a Chinese firm called JET that has an ammonia-based process for SOx control that produces a fertilizer product with no liquid waste stream.  
They claim that they will build and operate and will consider build, own and operate.  
Neither DOE nor I are endorsing this technology but I did recall the challenges at Bruce Mansfield (from my days at CONSOL) and thought that I would pass this along to you.  
JET's contact info is in the attached presentation.

All the best,

Steven Winberg  
Assistant Secretary  
Office of Fossil Energy  
Department of Energy  
1000 Independence Avenue, SW  
Washington, DC 20585  
202 586 6660

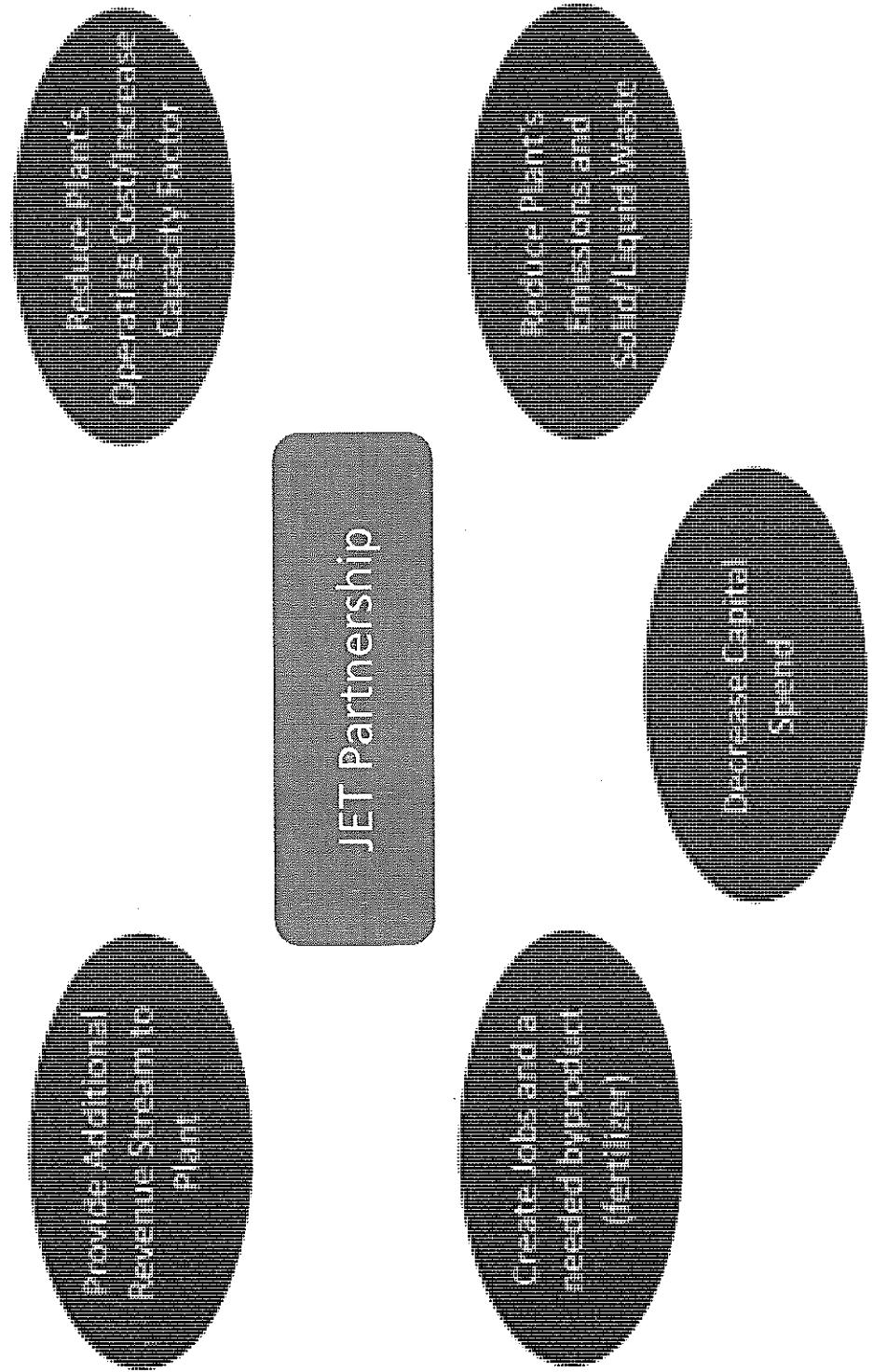


The Role of JET's Air Quality  
Control Technology in  
Revitalizing US Coal and Coal  
Power Industries

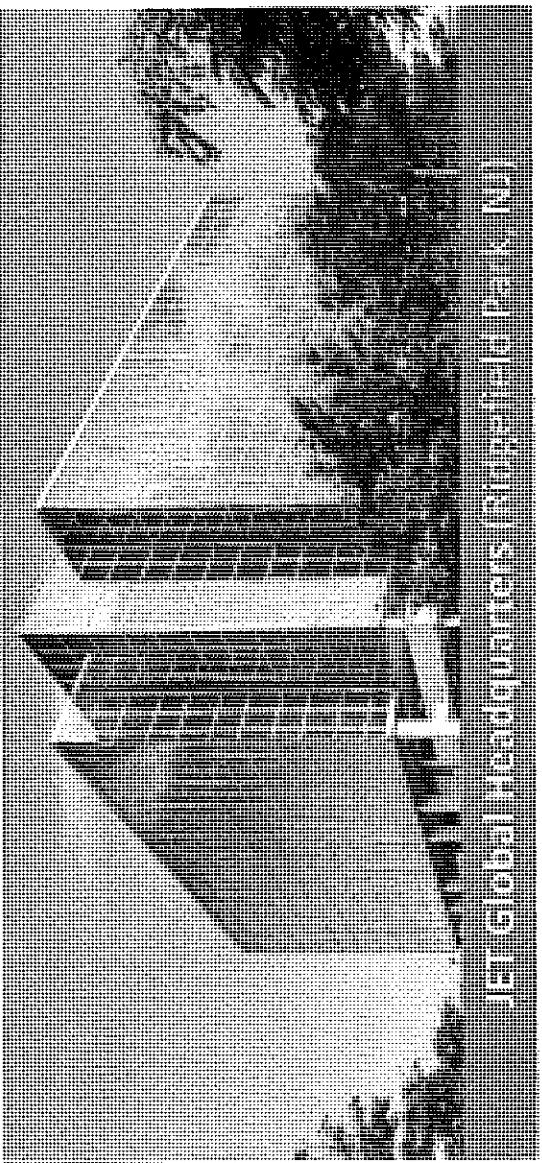
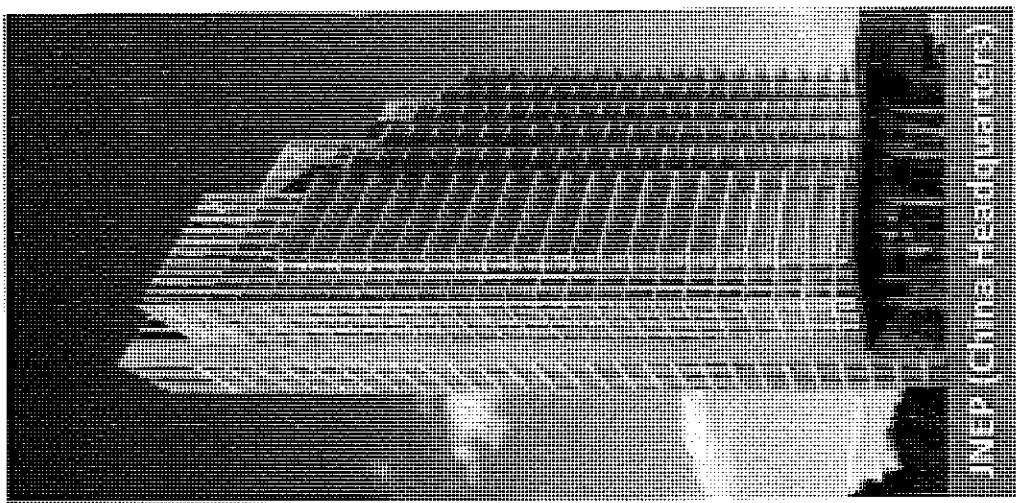
March 16<sup>th</sup>, 2018

## Partnership Model for Coal Plants

### JET Partnership



JET's mission is to partner with coal plants to help achieve long term viability



**Global leader with 80% market share in Ammonia-Based Desulfurization**

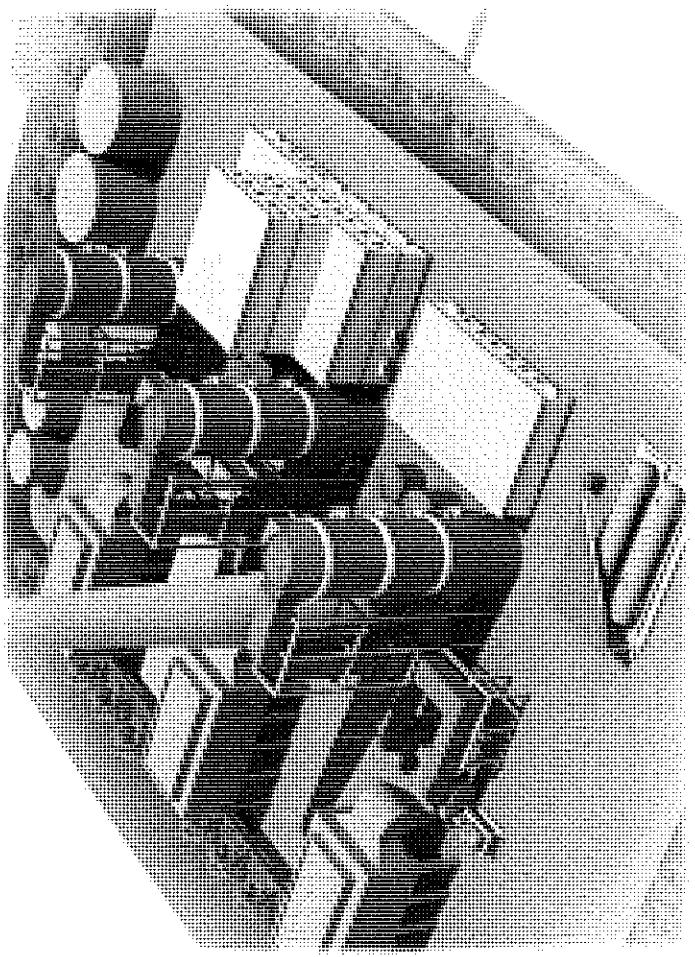
45 patent and patent applications

150+ projects with more than 300 installed units

- Grade A Design Qualification in Environmental Protection Projects
- Grade A Design Qualification in Chemical Engineering Projects
- Grade A Operation Qualification for Environmental faculties
- Contract Qualification for Environmental Projects
- Certificate of High and New Tech Enterprises
- ISO 9001 Quality Management System
- ISO 14001 Environmental Management System
- OHSAS 18001 Occupational Health and Safety Management System

# 30 Years of Ammonia Based Desulfurization

	Year	Features	NH <sub>3</sub> recovery	SO <sub>2</sub> emission ppm	Total dust lb/MMSCF	Performance
1 <sup>st</sup> Gen	1998	Basic NH <sub>3</sub> based deSOx	not controlled	~70		Meets SO <sub>2</sub> emission limit
2 <sup>nd</sup> Gen	2010	NH <sub>3</sub> based desOx with NH <sub>3</sub> recovery control	≥ 97%	< 35		Meets HG2001-2010 standard
3 <sup>rd</sup> Gen	2013	Fine PM control	≥ 98%	< 17.5	≤ 4.72	Meets GB13223-2011 special emission limit
4 <sup>th</sup> Gen	2015	Ultrasound-enhanced deSOx and PM-removal integration	≥ 99%	< 12	≤ 1.18	Meets ultra-low emission limit
<b>Over 300 units installed</b>						
<b>PERFORMANCE</b> <ul style="list-style-type: none"> <li>• Sulfur capture rates up to 99%</li> <li>• Ammonia usage &lt; 1.5 lb/MMSCF</li> <li>• Ammonium sulfate production</li> <li>• Low operating costs</li> </ul>						



THE SILENT GUARDIAN  
OF YOUR ASSOCIATIONS REGIONAL  
CONFERENCE REPORT

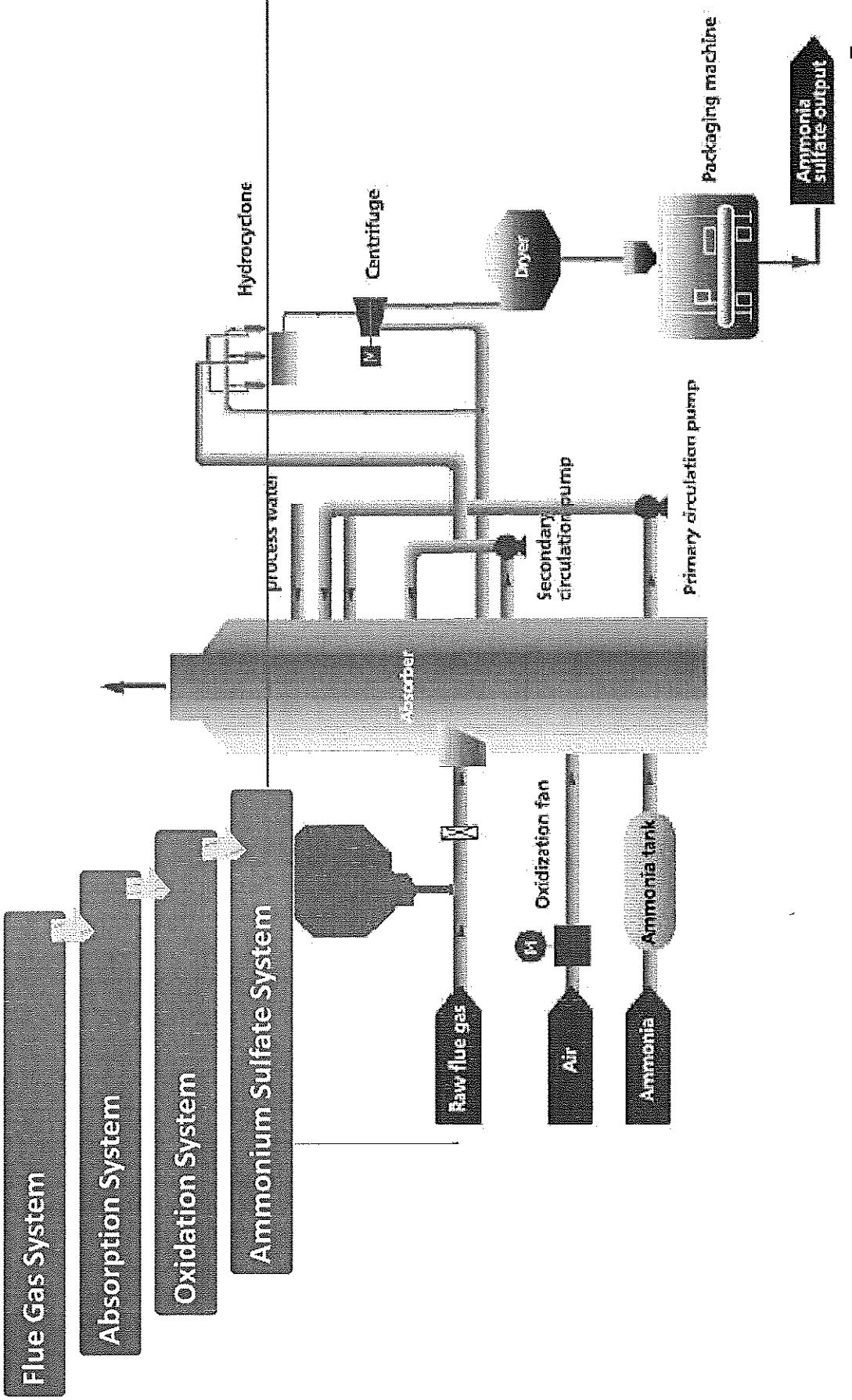
### PROGRAM OF LECTURES

#### GENERAL NOTES AND FIELD TRIP LINE

TOPICAL TOPICS TO PRACTICALLY  
DEMONSTRATE A PRACTICAL MEETING

#### FIELD TRIP

#### TO VARIOUS MUSEUMS AND SCIENTIFIC INSTITUTIONS



Absorbent	Limestone Process	EADS Process
By-Product	Gypsum	Ammonium Sulfate Fertilizer
SO <sub>2</sub> Removal Efficiency	≥ 95%	≥ 99%
Waster Water	55 lb/hr / MW	None
CO <sub>2</sub> Emissions	0.7 t/t SO <sub>2</sub> Removed	None
Power Consumption	Base	35-50% Less than Base
Operating Cost	Base	Negative (Makes Profit)

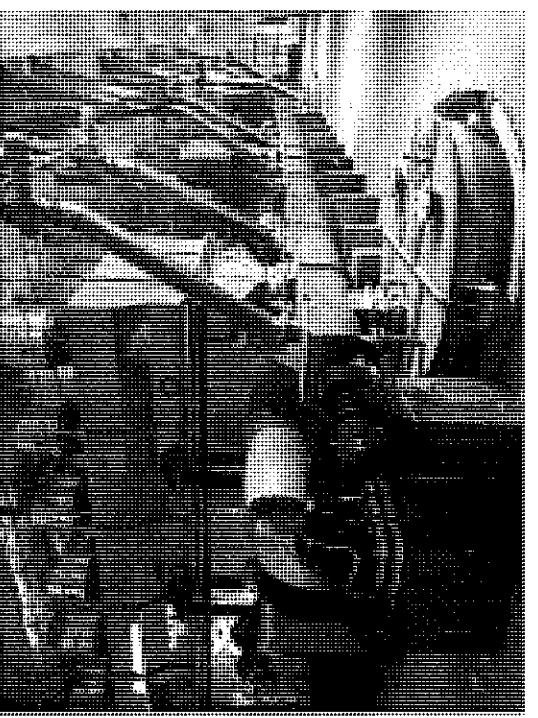
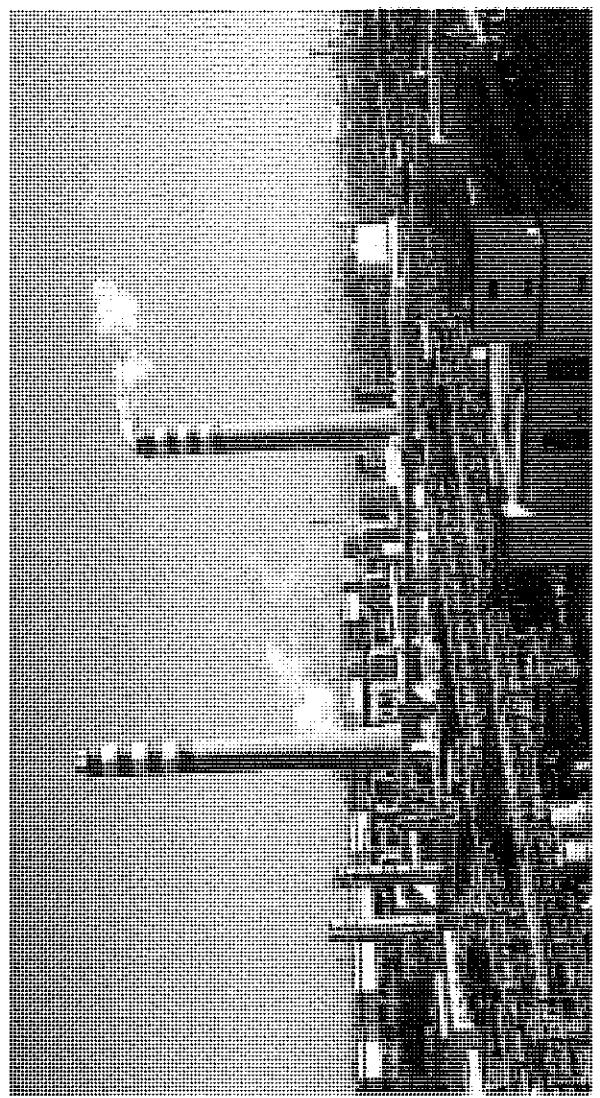
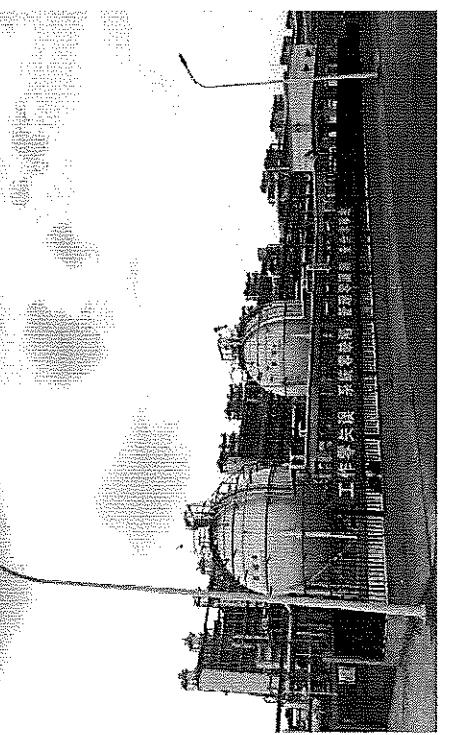
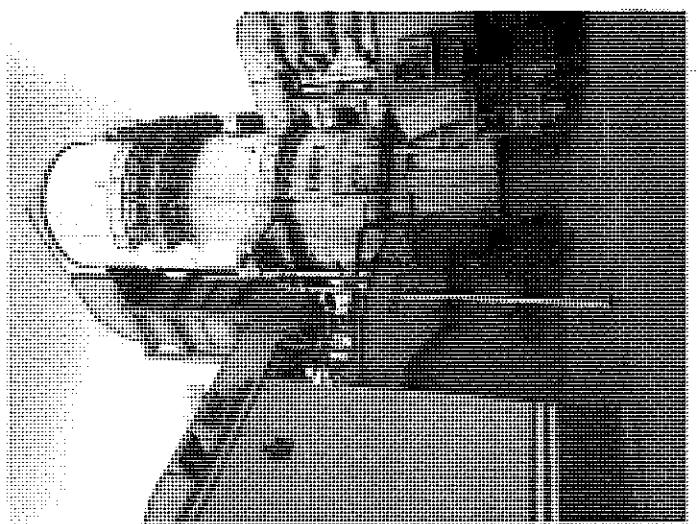


Figure 9-6 Deep well casting workshop of the steel plant

“Application of Ammonium Sulfate on diverse crops and growing demand for sulfur as a secondary nutrient are large drivers of the growth in North America. Growing use on specialty crops is a key driver of growth, and blending ammonium sulfate with other nutrients such as urea for additional nitrogen content has also increased.”

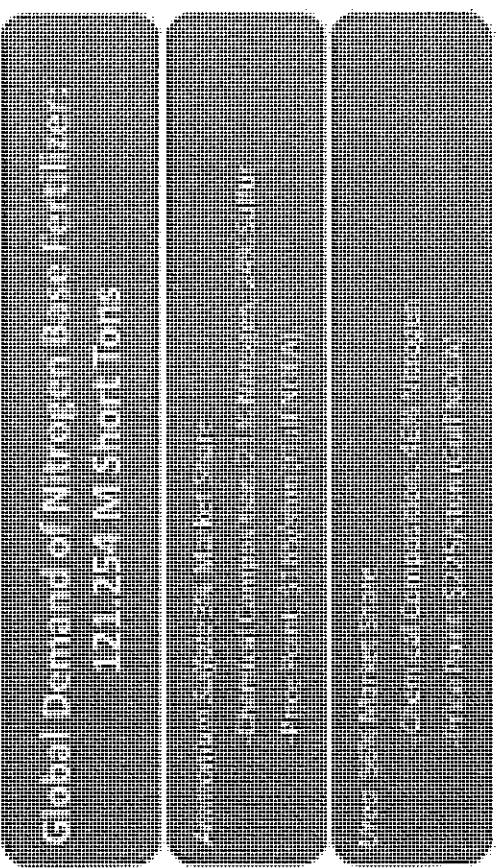
-Green Markets Research Report

“As sulfur becomes more and more a factor in cropping systems, there continues to be a need to satisfy the demand with dry fertilizer formulations. The number one choice for sulfur in combination with nitrogen is ammonium sulfate and all interviewees believe this desirability based on economic utility will continue in the foreseeable future.”

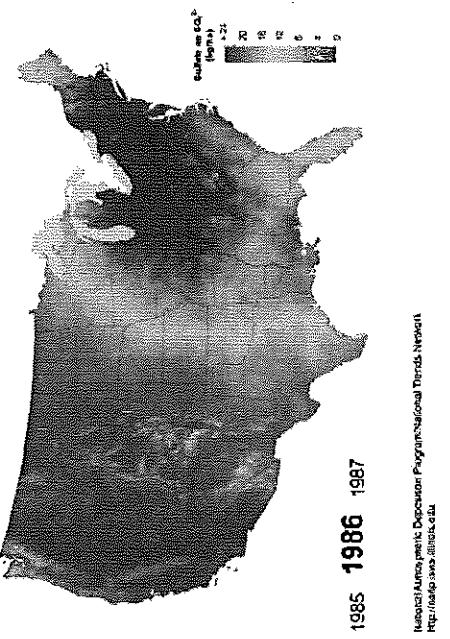
-Green Markets Research Report

## For Agro-Industrial Development

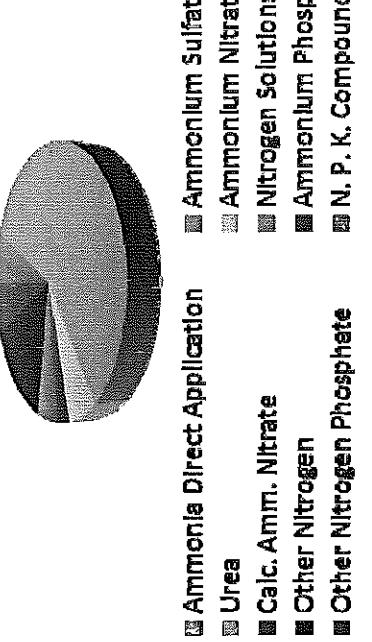
Ministry of Environment  
National Environmental Protection Program  
Sulfate Ion Wet Deposition



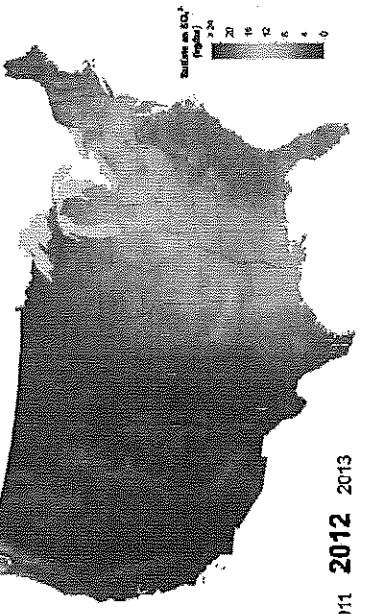
## Sulfate ion wet deposition



## Global Capacity of Nitrogen Fertilizer (%)



## Sulfate ion wet deposition



(b) (4)

(b) (4)

399 399 399

(b) (4)

SECRET//FOUO

- The ultra low emission standard in China was developed with the objective to make coal fired plants emissions as clean as natural gas fired plants
  - JET technology allows plants to meet ultra low emission limits
- JET's technology can be used as the first stage in a carbon capture process
- JET is dedicated to eliminating air pollution and improving the living environment through our advanced technology

JET's mission is to partner with coal plants  
to help achieve long term viability

## JET Partnership

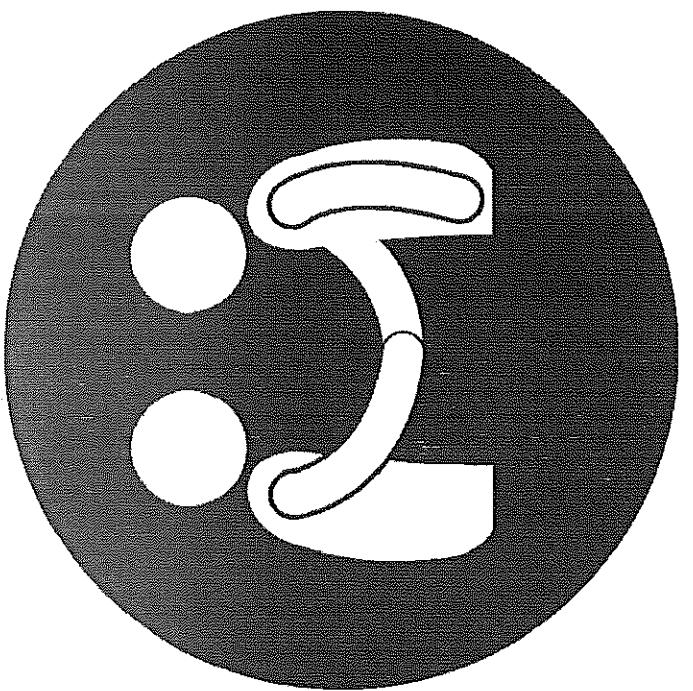
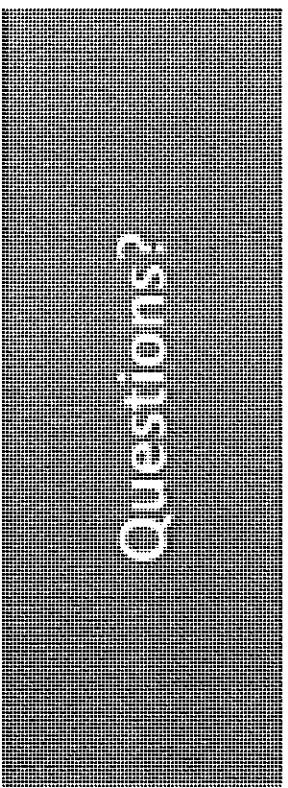
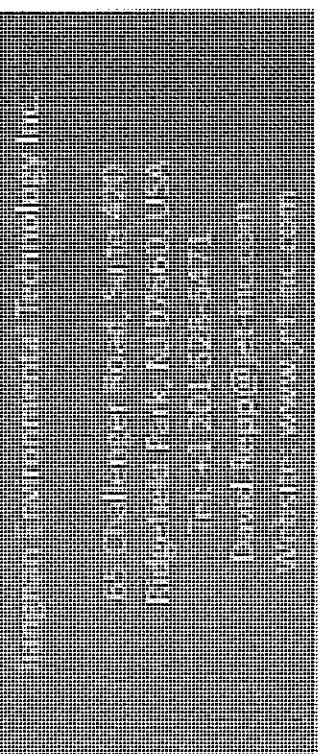
Reduce Emissions  
Create a Cost Effective  
Carbon Intensity Factor

Reduce Emissions  
Safely Manage and  
Utilize Coal Ash Wastes

Decrease Capital  
Spending

Create Jobs and  
Increase Energy  
Efficiency

Protect Natural  
Resource Stream to  
Revenue Project



**Rokebrand, Celtia R. (CONTR)**

---

**From:** Jaworowski, Suzanne  
**Sent:** Tuesday, January 23, 2018 7:13 PM  
**To:** Greenwood, John H  
**Subject:** RE: Streaming Contact and Greenwood's thoughts on MNC

John,

All I can say is you're the best! Really, you go above and beyond every time. I am impressed.

Thank you so much for everything. You're welcome running along side us in all of our activities.

Thank you!!!

Sincerely,

Suzie

---

**From:** Greenwood, John H <[jgreenwood@firstenergycorp.com](mailto:jgreenwood@firstenergycorp.com)>  
**Date:** Tuesday, Jan 23, 2018, 3:45 PM  
**To:** Trunzo, Alisa (CONTR) <[Alisa.Trunzo@Nuclear.Energy.Gov](mailto:Alisa.Trunzo@Nuclear.Energy.Gov)>, Tay Stevenson <[tay@generationatomic.org](mailto:tay@generationatomic.org)>, Sam Brewer <[sain@generationatomic.org](mailto:sain@generationatomic.org)>  
**Cc:** Jaworowski, Suzanne <[Suzanne.Jaworowski@hq.doe.gov](mailto:Suzanne.Jaworowski@hq.doe.gov)>  
**Subject:** Streaming Contact and Greenwood's thoughts on MNC

[matt@tamu.edu](mailto:matt@tamu.edu)

That is the streaming guy at Texas A&M. They haven't done a Facebook Live imbed yet, but I think they can figure it out.

John's Captured Thoughts for DOE.

The MNC is the right conversation at the right time. The brand must be set to ensure that the mission is accomplished. In my mind, the MNC should set a bare standard of what an event must consist of to be considered and MNC.

1. Streaming of Conversation of Nuclear : Could be panel, could be different just needs to be something that has some level of production value that goes on Facebook Live
2. Active Feed into #NuclearVisionary Twitter
3. Promotion activities for attendance in person, and for social media consumption
4. Some type of Outreach activity for nuclear education:

Without these components, I don't believe there is a consistency that is needed for a national movement. Again these are what I think are minimums. Items that I think would be important in addition:

Development of a promotional video (hype video) for the event. Fly by of what is nuclear in the surrounding area. Strong push by DOE in local media circuits, but local venue provides contacts at least 4 weeks in advance. Large push for Classroom Wraps, and campus activities that promote the MNC.

It was great chatting again. I see amazing potential in the MNC, and I have benefitted from hosting one. OSU Nuclear is being revitalized by these efforts. The program had been circling the drain. I am confident the recent conversations on campus will help with student recruitment and it has inspired the faculty.

I will be at University of Michigan this Thursday. I plan to pitch the idea and find a place to fit one.

I am going to push for a December 2 event (or at least the same week). This is the Fermi Criticality Anniversary date. As part of the event we will drink Chianti from paper cups.

Best Regards,

John H. Greenwood  
Nuclear Engineer  
Davis-Besse Nuclear Power Station  
O:(419) 249-2322  
C: (b) (6)

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**Rokebrand, Celtia R. (CONTR)**

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**From:** Greenwood, John H <jgreenwood@firstenergycorp.com>  
**Sent:** Wednesday, February 14, 2018 1:41 PM  
**To:** Jaworowski, Suzanne  
**Subject:** RE: December MNC and Help for Fund Raising

You can always make it both!

For you it is a relatively short drive. (b) (6)

John

**From:** Jaworowski, Suzanne [mailto:[Suzanne.Jaworowski@hq.doe.gov](mailto:Suzanne.Jaworowski@hq.doe.gov)]  
**Sent:** Wednesday, February 14, 2018 1:13 PM  
**To:** Greenwood, John H <jgreenwood@firstenergycorp.com>  
**Subject:** [EXTERNAL] RE: December MNC and Help for Fund Raising

Thanks John.

Once you get us the date we'll get someone there. It will likely be me or Brad Williams.

Thanks!

Suzie

**Suzanne Jaworowski**  
Senior Advisor  
U.S. Department of Energy | Office of Nuclear Energy  
202-586-2240

**From:** Greenwood, John H [<mailto:jgreenwood@firstenergycorp.com>]  
**Sent:** Tuesday, February 13, 2018 12:18 PM  
**To:** Jaworowski, Suzanne <[Suzanne.Jaworowski@hq.doe.gov](mailto:Suzanne.Jaworowski@hq.doe.gov)>  
**Subject:** RE: December MNC and Help for Fund Raising

I think I have a good design concept. If we can have you or someone do a Keynote or give talking points which we can advertise as occurring during the event that would be great.

MI-OH ANS is a registered 501 C 3 in the state of Michigan, if that matters.

The helping hand is to put an emphasis to the plants and leadership at the different venues to attend. Doug Huey, one of our Directors is on board with arm twisting.

If I can find someone like that at each plant... that will help make the effort a success.

Thanks!

John

**From:** Jaworowski, Suzanne [mailto:[Suzanne.Jaworowski@hq.doe.gov](mailto:Suzanne.Jaworowski@hq.doe.gov)]  
**Sent:** Tuesday, February 13, 2018 11:28 AM  
**To:** Greenwood, John H <[jgreenwood@firstenergycorp.com](mailto:jgreenwood@firstenergycorp.com)>  
**Subject:** [EXTERNAL] RE: December MNC and Help for Fund Raising

Hi John,

(b) (6)  
invitation for a fundraiser.

However, we cannot do the

We can do a media advisory if our staff is attending.

Are you just looking for design help?

Suzie

**From:** Greenwood, John H [mailto:[jgreenwood@firstenergycorp.com](mailto:jgreenwood@firstenergycorp.com)]  
**Sent:** Tuesday, February 13, 2018 10:38 AM  
**To:** Jaworowski, Suzanne <[Suzanne.Jaworowski@hq.doe.gov](mailto:Suzanne.Jaworowski@hq.doe.gov)>; Michael K Brandon <[michael.brandon@dteenergy.com](mailto:michael.brandon@dteenergy.com)>; Eric G. Meyer <[eric@generationatomic.org](mailto:eric@generationatomic.org)>; Huey, Douglas B <[dhuey@firstenergycorp.com](mailto:dhuey@firstenergycorp.com)>  
**Cc:** Olsen, Karla <[Karla.Olsen@EE.Doe.Gov](mailto:Karla.Olsen@EE.Doe.Gov)>; Trunzo, Alisa (CONTR) <[Alisa.Trunzo@Nuclear.Energy.Gov](mailto:Alisa.Trunzo@Nuclear.Energy.Gov)>  
**Subject:** RE: December MNC and Help for Fund Raising

Thanks Suzie,

I will get the dates to you soon.

Best,

John H. Greenwood

**From:** Jaworowski, Suzanne [mailto:[Suzanne.Jaworowski@hq.doe.gov](mailto:Suzanne.Jaworowski@hq.doe.gov)]  
**Sent:** Tuesday, February 13, 2018 10:03 AM  
**To:** Greenwood, John H <[jgreenwood@firstenergycorp.com](mailto:jgreenwood@firstenergycorp.com)>; Michael K Brandon <[michael.brandon@dteenergy.com](mailto:michael.brandon@dteenergy.com)>; Eric G. Meyer <[eric@generationatomic.org](mailto:eric@generationatomic.org)>; Huey, Douglas B <[dhuey@firstenergycorp.com](mailto:dhuey@firstenergycorp.com)>  
**Cc:** Olsen, Karla <[Karla.Olsen@EE.Doe.Gov](mailto:Karla.Olsen@EE.Doe.Gov)>; Trunzo, Alisa (CONTR) <[Alisa.Trunzo@Nuclear.Energy.Gov](mailto:Alisa.Trunzo@Nuclear.Energy.Gov)>  
**Subject:** [EXTERNAL] RE: December MNC and Help for Fund Raising

Hi John,

Great to hear from you. That sounds like a great idea.

(b) (6)

I am copying Karla – to see if we can provide you with an invite? I am not sure about that, but we can share the invite.

I am copying Alisa on the MNC at the end of the year.

That all sounds great. Let us know the dates for the MNC and the Golf Outing and we'll get it on the calendar.

Thank you.

Suzie

**From:** Greenwood, John H [mailto:[greenwood@firstenergycorp.com](mailto:greenwood@firstenergycorp.com)]  
**Sent:** Tuesday, February 13, 2018 9:42 AM  
**To:** Jaworowski, Suzanne <[Suzanne.Jaworowski@hq.doe.gov](mailto:Suzanne.Jaworowski@hq.doe.gov)>; Michael K Brandon <[michael.brandon@dteenergy.com](mailto:michael.brandon@dteenergy.com)>; Eric G. Meyer <[eric@generationatomic.org](mailto:eric@generationatomic.org)>; Huey, Douglas B <[dhuey@firstenergycorp.com](mailto:dhuey@firstenergycorp.com)>  
**Subject:** December MNC and Help for Fund Raising

Hi Suzie,

I would like to do an end of the year Millennial Nuclear Caucus at the University of Michigan towards the end of the year. Again, I am looking to make it a big push on campus to get students across multiple disciplines interested in Nuclear. This will be done in a way that utilizes Generation Atomic.

To do this well, I am going to need to do some fund raising on behalf of MI-OH ANS. I am planning to establish a Golf outing this Summer. Funds raised by the outing will be used for general MI-OH ANS chapter operations, but a good deal of it would go to an MNC event and surrounding promotional and workup costs.

What I am hoping to gain is DOE bump or endorsement of some sort to help sell participation in the outing. My target donors and players in the outing is the Nuclear Generating Stations in Michigan and Ohio, plus all the University and Community College Nuclear Programs.

I am thinking an appearance from you or the Assistant Secretary (or both) would be a great way to drive interest. If you could write an Invite to the event that I could use to send to the stations that would be excellent! I know there are limits on what you can and cannot do.

I think the concept is solid though, I noticed that the best DOE Office of Nuclear Video is now the Eric MNC video.

Hope all is going well with the Texas MNC!

Best Regards,

John H. Greenwood  
Nuclear Engineer  
Davis-Besse Nuclear Power Station  
O:(419) 249-2322  
C: (b) (6)

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**Rokebrand, Celtia R. (CONTR)**

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**From:** Carey, Michael <mcarey@coalsource.com>  
**Sent:** Friday, February 23, 2018 7:19 AM  
**To:** McCormack, Brian  
**Subject:** Letters  
**Attachments:** 2018.2.15 ltr to Trump re Nuclear energy value.pdf; Letter to President Trump 02202018.pdf; 022018 CER ltr to President Trump.pdf; 2.20.18 Baseload Power Plants JPH letter to President Trump.pdf; IBB Jones Letter Pres Trump 022118.PDF; 2-21-2018 Final Signed Letter to the President on Electric Grid Resiliency.pdf

**Congress of the United States**  
**Washington, DC 20515**

February 15, 2018

**President Donald J. Trump**  
The White House  
1600 Pennsylvania Ave, NW  
Washington, DC 20050

Dear President Trump,

We write to urge immediate action to support clean American electricity generation in the form of nuclear power. Rapid changes in the energy sector over the last decade, most notably the discovery of large amounts of natural gas and the corresponding advancements in drilling technology, have driven down the price of electricity generation from gas-fired power plants and undercut baseload generation at nuclear power plants.

Nuclear power is abundant, reliable, inexpensive, carbon free, and relatively immune from unpredictable conditions that can disrupt the delivery of other fuels. From a national security perspective, nuclear energy is a key component of our national nuclear strategy. Premature closure of America's nuclear power plants threatens our competitive edge in this field. Without a commitment to nuclear power, nuclear technology development will decline and the Nation's technical advantage in this sector will rapidly erode. Our commercial nuclear energy industry and the United States' nuclear weapons complex complement each other to ensure our great Nation maintains the best nuclear talent and technology in the world. According to a report by the Global Nexus Initiative, if current trends continue, the U.S. will cede its lead in the nuclear power market to Russia, China, and India in the coming decades.

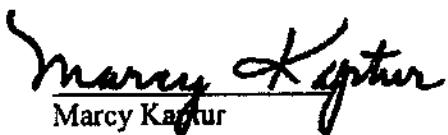
The Energy Futures Initiative, which is led by Former Secretary of Energy Ernest Moniz, recently released a report that stated that a commercial atomic power sector is necessary to keep uranium-processing technology away from terrorists and other bad actors. Additionally, it will support nuclear-powered Navy vessels. The U.S. needs companies and engineers that can both build and run nuclear enterprises. The U.S. Navy's reactors require supplies and qualified engineers, and American nuclear scientists fill vital national security roles, it said. According to the report, a "shrinking commercial enterprise will have long term spillover effects on the Navy supply chain, including lessened enthusiasm among American citizens to pursue nuclear technology careers."

Unfortunately, recent news reports reveal that Ohio's only two nuclear power plants appear headed for premature closure. The Davis-Besse and Perry nuclear power plants in northern Ohio are important components to the regional economy and to America's energy security. These high-performing plants are economic engines that provide good-paying jobs both at the plants and through a far-reaching supply chain. These jobs support thriving communities and generate critical tax revenue that fund essential services. Northeast Ohio's Port Clinton News-Herald reported that public schools in Perry stand to lose \$2.3 million in funding if the Perry nuclear

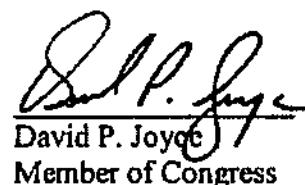
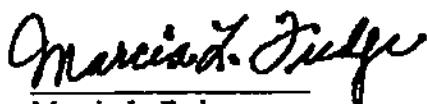
power plant closes. In addition, Ohio's two nuclear power plants produce 90 percent of the state's carbon-free electricity.

We urge you and your Administration to step in and offer immediate assistance to prevent these critical generators from closing prematurely. A robust nuclear energy enterprise is a key enabler of the Nation's nonproliferation goals and supports both the fleet modernization plans of the U.S. Navy as well as the global strategic stability and deterrence value of nuclear weapons. We ask that your Administration work with Ohio and other states with nuclear power facilities in financial distress to harmonize federal and state policies affecting the design of organized electricity markets. Specifically, we believe that these markets should appropriately value attributes including reliability, supply diversity, greenhouse gas emissions, and relative national security importance. Time is of the essence.

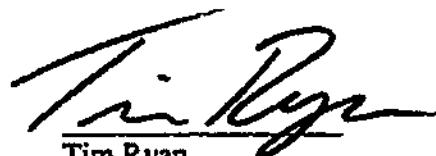
Sincerely,



Marcy Kaptur  
Marcy Kaptur  
Member of Congress

  
David P. Joyce  
David P. Joyce  
Member of Congress

Marcia L. Fudge  
Marcia L. Fudge  
Member of Congress

  
Tim Ryan  
Tim Ryan  
Member of Congress

CC: Hon. Rick Perry, Secretary of Energy

# UTILITY WORKERS UNION OF AMERICA

D. MICHAEL LANGFORD  
PRESIDENT

STEVEN VANSLOOTEN  
EXECUTIVE VICE PRESIDENT

MICHAEL COLEMAN  
SECRETARY-TREASURER

JOHN DUFFY  
VICE PRESIDENT

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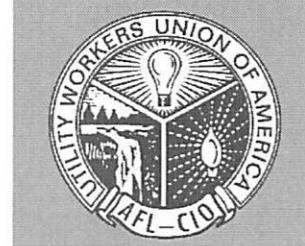
JAMES SLEV N  
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ANTHONY PEDAGNA  
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TRAVIS L. BECK  
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February 20, 2018

President Donald J. Trump  
The White House  
1600 Pennsylvania Ave, NW  
Washington, DC 20050

Dear President Trump,

The hard-working men and woman who work in our nation's power plants need your help – and they need your help now. Last month, the Federal Energy Regulatory Commission (FERC) rejected a proposed rule by the Department of Energy (DOE) that would have corrected competitive electricity markets to appropriately value attributes uniquely provided by fuel-secure baseload generators - predominantly critical coal and nuclear power plants. FERC's failure to timely address the pressing need to fix America's electricity markets will have devastating consequences for our economy, our power grid, and our national security.

Most alarmingly, power plant closures will be immediate and irreversible. Largely because of punitive regulatory pressures against coal and nuclear power, approximately 60,000 megawatts of fuel-secure baseload power plants have closed over the last several years and many more are slated for premature closure in the near future. Unfortunately, the improved regulatory environment will not stop those closures from happening. Electricity market rules simply do not value the reliability and resiliency attributes that fuel-secure baseload generators provide the grid.

The imminent closure of these plants will have far-reaching effects. First and foremost, the nation's power grid needs fuel-secure baseload power. Coal and nuclear fuel are abundant, reliable, affordable and not vulnerable and unpredictable conditions or emergencies that can disrupt the delivery of other fuels. Coal-fired power plants can stockpile several weeks' or months' worth of fuel on site; nuclear generators store enough fuel to last months or even years.

In the case of an extreme weather emergency, a coordinated attack or any significant disruptions to the fuel delivery infrastructure, fuel-secure baseload generators are the only ones capable of continuing operations. If fuel-secure baseload plants continue to be forced to retire, our power grid is likely to become overloaded or fail in the event of a sudden, extreme increase in demand.

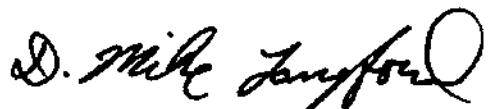
This is not merely a hypothetical situation: the 2014 polar vortex stretched the country's natural gas pipeline system well past its capabilities, resulting in skyrocketing prices and fuel shortages. These shortages during extreme cold temperatures could have been deadly, if not for fuel-secure baseload power plants that essentially carried the grid through the extended emergency. Many of the generators that were running full-out have since retired.

Experts agree. The North American Electric Reliability Corporation (NERC), which is responsible for establishing reliability standards for our grid, described the tenuous situation well in comments it provided to Secretary Perry's proposal. NERC said "Coal and nuclear generation generally have the unique attributes of low outage rates, high availability rates, and, with on-site storage, low fuel supply sensitivity necessary to provide secure and stable capacity to the grid. While their current benefits and potential are significant, non-synchronous

generation and natural gas-fired facilities do not currently replace the secure capacity provided by coal and nuclear generation."

FERC's failure to approve the DOE proposal to properly value the reliability and resiliency attributes uniquely provided by fuel-secure baseload generators could soon prove to be a catastrophic mistake. We do not have the luxury of kicking the can any farther down the road. Without immediate action to stop the imminent closure of fuel-secure baseload generators, our country will find itself confronted with a crisis that could have been prevented. This is not a question of if, but when.

I urge the White House to direct DOE Secretary Rick Perry to use the emergency powers under his authority to stop the coming closures of additional coal and nuclear plants across the country. This is the only way to prevent the impending disaster. The country cannot afford further delays. DOE must act right away.

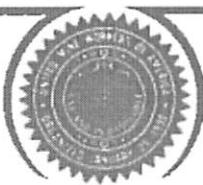


Sincerely,  
D. Michael Langford  
National President  
Utility Workers Union of America, AFL-CIO

CC: Hon. Rick Perry, Secretary of Energy

# United Mine Workers of America

CECIL E. ROBERTS  
INTERNATIONAL PRESIDENT



TELEPHONE  
(703) 291-2420  
FAX (703) 291-2451

UNITED MINE WORKERS' HEADQUARTERS  
18354 QUANTICO GATEWAY DRIVE, SUITE 200

Triangle, VA

22172-1779

February 20, 2018

President Donald J. Trump  
The White House  
1600 Pennsylvania Avenue, N.W.  
Washington, DC 20500

Dear President Trump:

The imminent closure of dozens of coal-fired power plants is a crisis that needs to be addressed right away. As you know, a recent Department of Energy (DOE) proposal to correct electricity markets to properly value baseload energy sources would have prevented these closures while ensuring grid reliability and resilience. Unfortunately, the Federal Energy Regulatory Commission (FERC) rejected the proposal.

However, the Commission's inaction does not mean the problem has gone away. The plants in question will not re-open once they are offline. They will be added to the hundreds of coal-fired plants that have closed for good in recent years. The warning signs for the coming crisis have been on the horizon for years. It is no longer a far-off possibility: FERC's own projections show that 20,650 MW of coal capacity will close by 2020.

The American power grid is fueled by a diverse mix of resources, including natural gas, wind, and solar power. However, at its core, the grid relies on baseload sources like coal and nuclear power. Without these baseload sources, the grid becomes instantly vulnerable to extreme weather events, natural disasters, fuel supply chain disruptions, and terrorist attacks.

The closure of additional coal-fired plants means our grid will face a crisis scenario – possibly very soon. Such a crisis nearly took place in 2014, when the polar vortex stretched the natural gas supply beyond its limits and communities across the country faced electricity shortages and extreme spikes in price for available fuel. The scenario would have been deadly, but baseload power resources were able to supplement natural gas pipeline constraints and provide adequate power to distressed areas.

That was four years ago. The situation is now even more dire. Coal-fired plants can store weeks' worth of fuel on-site and therefore do not have the same supply chain vulnerabilities as

other resources such as natural gas. But the availability of these stockpiled resources is diminishing by the day.

Coal mining, transportation, and related electric power generation account for more than 800,000 direct and indirect jobs, many in economically distressed regions of the nation. We cannot afford to lose these good middle-class jobs, or the coal mines and power plants that provide the bulk of community tax bases supporting essential services such as education, firefighters and police.

In addition, any more plant closings will only exacerbate the looming crisis with respect to the pensions of more than 107,000 current and future retired miners and surviving spouses. Coal industry bankruptcies over the last several years – caused by the premature plant closings and utility fuel switching – have eliminated more than \$100 million in annual contributions to the retirees' pension plan. Any further bankruptcies of contributing employers will cause the plan to collapse.

FERC's inaction leaves few options to stave off serious problems for our electric grid and economic disaster for hundreds of thousands of our nation's energy workers, retirees and those who live in their communities. I urge you to take the necessary steps to prevent the closure of additional coal-fired power plants.

The security and stability of our power grid is at risk, along with thousands of jobs in already hard-hit parts of our nation. Emergency action – now – is only way to prevent further deterioration of our country's reliable and affordable energy supply.

Sincerely,



Cecil E. Roberts

cc: Rick Perry, Secretary of Energy  
Levi Allen, International Secretary-Treasurer  
International Executive Board  
Regional Directors  
Department Heads

# INTERNATIONAL BROTHERHOOD OF TEAMSTERS

JAMES P. HOFFA  
General President

25 Louisiana Avenue, NW  
Washington, DC 20001



KEN HALL  
General Secretary-Treasurer

202.624.6800  
[www.teamster.org](http://www.teamster.org)

February 20, 2018

President Donald J. Trump  
The White House  
1600 Pennsylvania Avenue NW  
Washington, D.C. 20500

Dear Mr. President:

On behalf of the 1.4 million members of the International Brotherhood of Teamsters, I urge your immediate action to secure our nation's baseload power plants and the long-term security and resilience of the electric grid. The Teamsters represent individuals employed in virtually every occupation imaginable, both professional and non-professional, private sector and public sector. Baseload coal and nuclear power plants directly employ more than 154,000 workers, produce major infrastructure projects that put Americans to work, and support a resilient and dependable electric grid.

Baseload power plants have long been the dependable work horses of the electric system, providing energy and ancillary services to customers 24 hours a day, 365 days a year. With significant on-site fuel reserves, they provide the resilience required to keep electricity flowing under all adverse circumstances. Unlike other energy resources, their operation is not subject to interruption by factors such as extreme weather events or attacks on infrastructure. Our national security, and the economic base of communities across the nation, is dependent on maintaining these plants to support a resilient supply of affordable electricity.

However, numerous baseload power plants have permanently shut down in recent years, and many more are expected to close prematurely in the very near future. Once they are gone, they are gone for good. Baseload generation is under serious threat from market-distorting subsidies and mandates, regulations that target these resources and markets that don't value resilience.

President Donald J. Trump

February 20, 2018

Page 2

We are at a crisis point. Further decline in the number of plants will not only impact the grid and national security, it will cost valuable jobs and discourage industrial development opportunities nationwide. This is an outcome the Teamsters and America simply can't afford.

Unless corrective actions are taken, including new mechanisms that recognize baseload attributes and ensure appropriate compensation for providing the resilience and dependability benefits, the long-term viability of these baseload plants along with the jobs and community economic benefits they bring is in peril. I urge you to direct Secretary Perry to use his emergency authority to save our nation's valuable baseload power plants.

Sincerely,



James P. Hoffa  
General President  
International Brotherhood of Teamsters

International Brotherhood of  
**BOILERMAKERS • IRON SHIP BUILDERS**

753 State Avenue

**NEWTON B. JONES**  
INTERNATIONAL PRESIDENT  
SUITE 670  
913-371-2640  
FAX: 913-281-8101



**BLACKSMITHS • FORGERS & HELPERS**

Kansas City, Kansas 66101-2511

**WILLIAM T. CREEDEN**  
INTERNATIONAL SECRETARY-TREASURER  
SUITE 885  
913-371-2640  
FAX: 913-281-8102

February 21, 2018

President Donald J. Trump  
The White House  
1600 Pennsylvania Avenue, NW  
Washington, DC 20050

Dear President Trump,

On behalf of the International Brotherhood of Boilermakers, Iron Ship Builders, Blacksmiths, Forgers and Helpers (Boilermakers), I write to urge action by your administration, through the Department of Energy (DOE), to use emergency powers to avoid the imminent closure of critical coal and nuclear power plants. Hundreds of coal-fueled generating plants have closed over the past several years due to lower natural gas prices and stringent EPA regulations. Some nuclear units are at risk because they cannot recover their costs under current electricity market rules, leaving some states struggling to ensure their economic viability.

Recently, the Federal Energy Regulatory Commission (FERC) rejected a proposed rule by DOE to provide full cost recovery for coal and nuclear units operating in competitive power markets. This rule would have helped to ensure fuel diversity and resilience of the electric power grid by correcting competitive electricity markets in the way that power producers are compensated. DOE's proposed rule recognized that baseload coal and nuclear plants provide unique benefits to the electric grid due to the security of their "on the ground" fuel supplies and their inherent stability and reliability.

Unfortunately, the lack of action by FERC has now left too many of these coal and nuclear power plants vulnerable to imminent retirement. These plant closures will certainly result in further strain on the electric grid and reliability - not to mention the detrimental effects on the communities that these plants support through a strong tax base and steady employment, including thousands of highly-skilled Boilermakers who construct and maintain these coal and nuclear units.

Too many baseload power plants have already closed in recent years. The premature retirement of many more due to outdated market rules will further undermine electric reliability, affecting consumers, manufacturing industries, and high-tech businesses. Once these baseload power plants close, they do not reopen.

FERC's refusal to address this problem as proposed by DOE has left few alternatives and, in our view, requires immediate, corrective action by DOE.

I urge you to direct DOE Secretary Perry to use his emergency authority to intervene in this serious situation to prevent the further closure of coal and nuclear baseload generators.

Sincerely,



Newton B. Jones  
International President

cc: Hon. Rick Perry, Secretary, Department of Energy  
U.S. International Vice Presidents

**Congress of the United States**  
**Washington, DC 20515**

**February 21, 2018**

**The Honorable Donald J. Trump  
President of the United States  
The White House  
1600 Pennsylvania Avenue, NW  
Washington DC 20500**

**Dear Mr. President,**

**We write to express our concern regarding the preservation of our nation's fuel-secure generation capacity and threats to the resiliency of the nation's electric grid. We must ensure that the grid provides affordable, reliable, and resilient electricity on a daily basis. As a matter of both national and economic security, the electric grid must have the resiliency to respond to extreme circumstances.**

**Fuel-secure baseload generators, primarily coal and nuclear, are under duress. An alarming number of coal and nuclear plants have closed prematurely and more are closing at a fast rate. This is especially true in the competitive, so-called merchant markets. The rate of plant closures has a compounding effect on grid resiliency – the ability to operate through an emergency or extreme conditions – by placing undue risk of severe consequences on the system.**

**Our nation's nuclear and coal plants are predominantly immune to short-term fuel supply disruptions, which makes them resilient. Evidence of how integral they are to the U.S. was demonstrated in 2014 when the Polar Vortex overstressed the grid, and many generation sources were unable to respond to power needs because of fuel supply disruptions. When the grid in much of the U.S. narrowly avoided operational failure, it was fuel-secure baseload power plants and not variable sources of electricity or those with interruptible fuel supplies that provided a resilient source of electricity.**

**A major factor putting coal and nuclear plants at a disadvantage are federal and state subsidies to intermittent power providers, making them artificially competitive. Additionally, government mandates for purchases of certain forms of electricity and excessive regulations on nuclear and coal providers negatively impact those resources' cost competitiveness. Adding to those headwinds, grid operators (Regional Transmission Organizations – RTOs) fail to create market rules that fairly compensate fuel-secure baseload generators for the resiliency they provide the grid. Coal and nuclear generators**

maintain adequate fuel on-site to ride through an extended emergency, and do so without being compensated for that.

Beyond the risk injected into the electric grid carried over from the previous administration, there are national economic concerns at play too. If anti-resiliency bias within the RTOs' pricing models persists, thousands of workers and their families will be negatively affected. For generations, nuclear and coal have provided well-paying jobs in communities across America. Further plant closures will have huge negative economic effects, rippling across entire regions and drive up electric prices for ratepayers. Without your immediate help, these industries will not be able to provide the good jobs and the resilient electricity supply our nation currently has.

Mr. President, we are asking you to safeguard the grid's fuel security and direct the Secretary of Energy to exercise his Section 202(c) emergency powers under the Federal Power Act. We also request the Department of Energy evaluate the announced and expected retirement of additional fuel-secure baseload generation units and the potential national security and economic ramifications. Gambling with the resiliency of the electric grid is unnecessary and puts the safety of all Americans at risk.

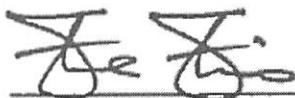
We applaud the extraordinary efforts you have already made to help turn our nation's struggling economy around, especially for middleclass workers. We hope that you will recognize the immediate severity of this issue and will take appropriate action to safeguard the electric grid's resiliency.

Thank you for your leadership, and your efforts to ensure that our nation has a safe and resilient electric grid.

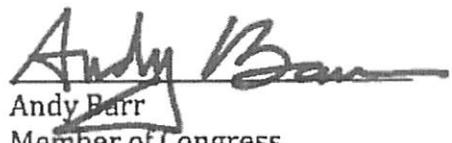
Sincerely,

*Keith J. Rothfus* *David B. McKinley* *Shelley Moore Capito*  
Keith J. Rothfus David B. McKinley, P.E. Shelley Moore Capito  
Member of Congress Member of Congress U.S. Senator

*Mitch McConnell*  
Mitch McConnell  
U.S. Senate Majority Leader



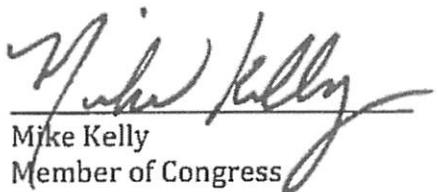
Steve Stivers  
Member of Congress



Andy Barr  
Member of Congress



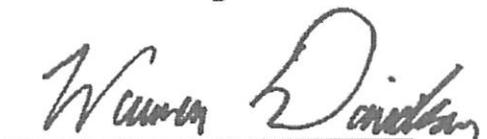
Scott Perry  
Member of Congress



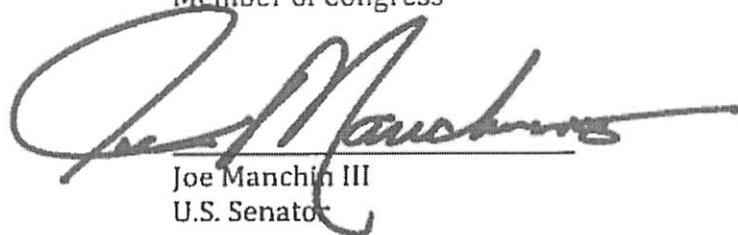
Mike Kelly  
Member of Congress



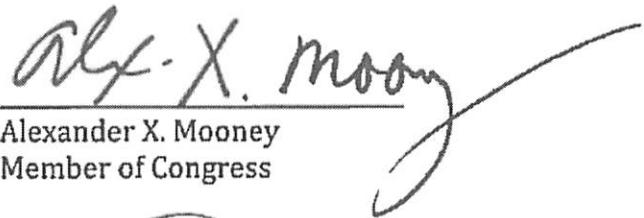
James Comer  
Member of Congress



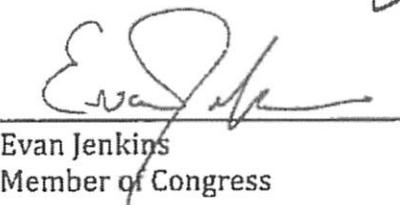
Warren Davidson  
Member of Congress



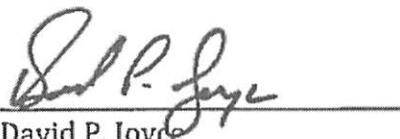
Joe Manchin III  
U.S. Senator



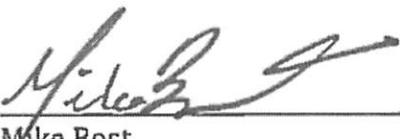
Alexander X. Mooney  
Member of Congress



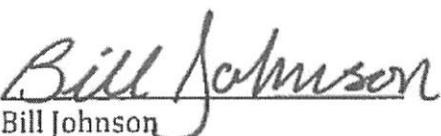
Evan Jenkins  
Member of Congress



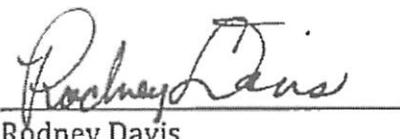
David P. Joyce  
Member of Congress



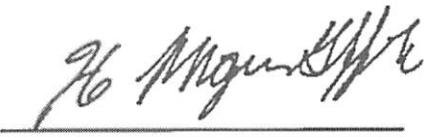
Mike Bost  
Member of Congress



Bill Johnson  
Member of Congress



Rodney Davis  
Member of Congress



H. Morgan Griffith  
Member of Congress

Bob Gibbs

Bob Gibbs  
Member of Congress

Glenn GT Thompson

Glenn "GT" Thompson  
Member of Congress

Robert E. Latta

Robert E. Latta  
Member of Congress

Larry Bucshon

Larry Bucshon, M.D.  
Member of Congress

Jim Jordan

Jim Jordan  
Member of Congress

**Rokebrand, Celtia R. (CONTR)**

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**From:** Greenwood, John H <jgreenwood@firstenergycorp.com>  
**Sent:** Monday, June 18, 2018 4:04 PM  
**To:** Eric G. Meyer; Jaworowski, Suzanne  
**Subject:** A Greenwood Draft of the Energy Declaration

Hi Eric,

I took a quick stab. Really a straw man for the Declaration. The first paragraph is a direct rip from the Declaration of Independence. However, I set the declaration to the over arching fault and problems I see in the world when it comes to energy. In that instance I made it much less directly about nuclear technology, but more so that in the 21<sup>st</sup> century that access to energy is essential to the protection of our timeless unalienable rights. That now in the course of human history we have the knowledge and resource to provide that energy to all and protect the natural order. See my draft below. I am hoping for gravitas, and I am hoping for disagreement so we can make a meaningful declaration and an impactful rallying thought for the members of ANS.

When in the Course of human events it becomes necessary for one people to dissolve the political bands which have connected them with another and assume among the powers of the earth, the separate and equal station to which the Laws of Nature entitle them, a decent respect to the opinions of mankind requires that they should declare the causes which impel them to the separation.

We hold the following to principles of governance to be self-evident, man-kind is specially endowed with dominion over the earth, governance of the earth's resources must be executed by a means in which the natural order is respected, and men's unalienable rights are preserved. Time has had no change on the unalienable right's of Life, Liberty, and the pursuit of Happiness. In the 21<sup>st</sup> century it is inarguable that access to energy is required to secure these rights. Mankind now possess the knowledge and technology to produce energy that can utilized by all according to the principles we believe. That the execution of governance in energy markets are not aligned these principles and millions needlessly live in poverty and needless environmental harm is inflicted upon the planet of which we hold dominion.

**We need to insert examples of the assertions of energy inequality here, and also needless environmental harm.**

We, therefore, the representatives of nuclear technologies, assembled, appealing to all mankind, do solemnly publish and declare, that by all means we will engage all governments to dissolve roadblocks to full proliferation of energy to all, to serve to improve the world as we know it in our generation and preserve the resources to this earth and all resources that come into the dominion of mankind through the application of science into the free utilization of energy for all. And for the support of this Declaration, with the firm reliance on the protection of All, we mutually pledge to each other our Lives, our Fortunes, and our Sacred Honor.



**John H. Greenwood**

Manager, External Affairs

O: 724.598.4748

c: (b) (6)

[jgreenwood@firstenergycorp.com](mailto:jgreenwood@firstenergycorp.com)



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